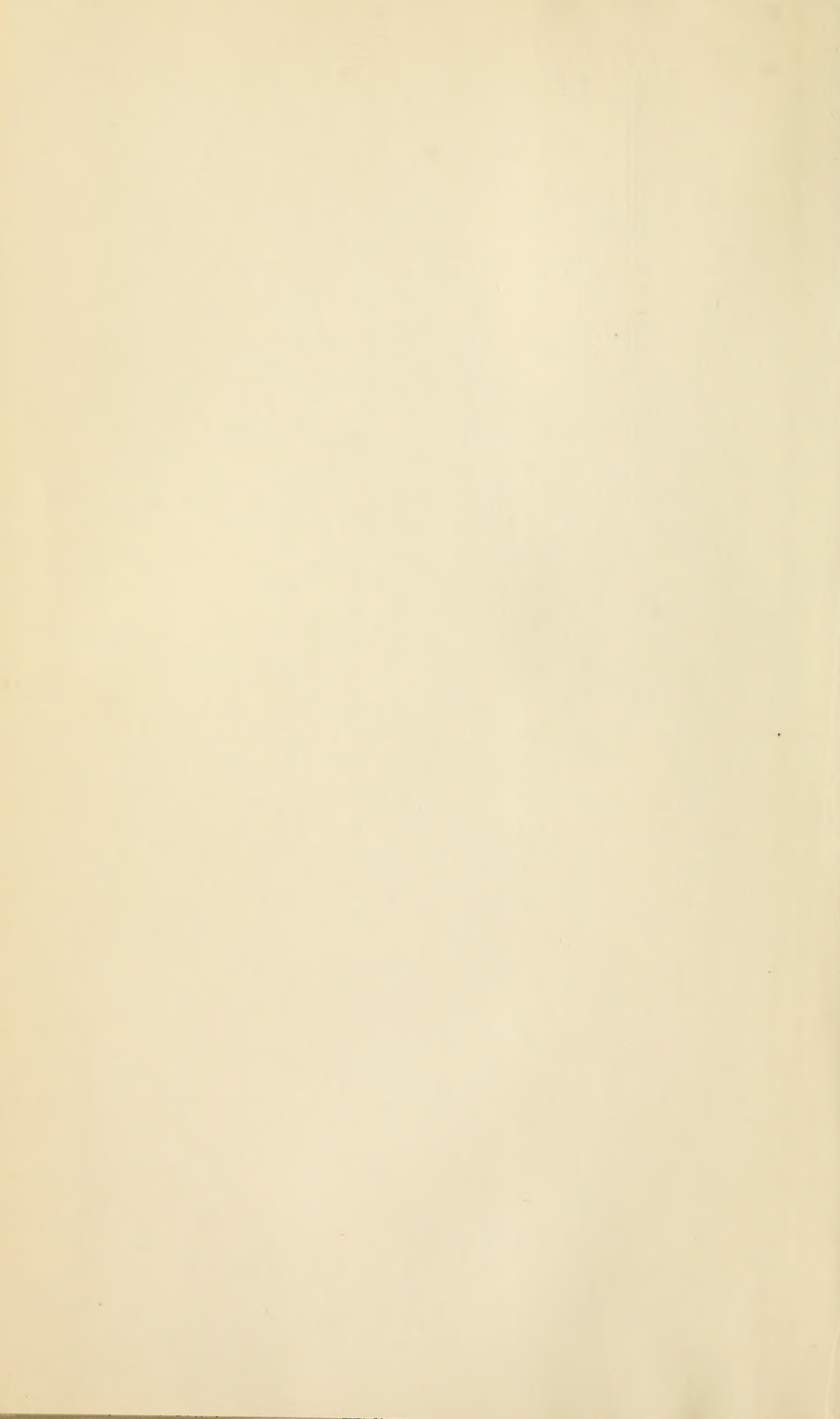




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SHARE IT



System of Birds



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N.M.

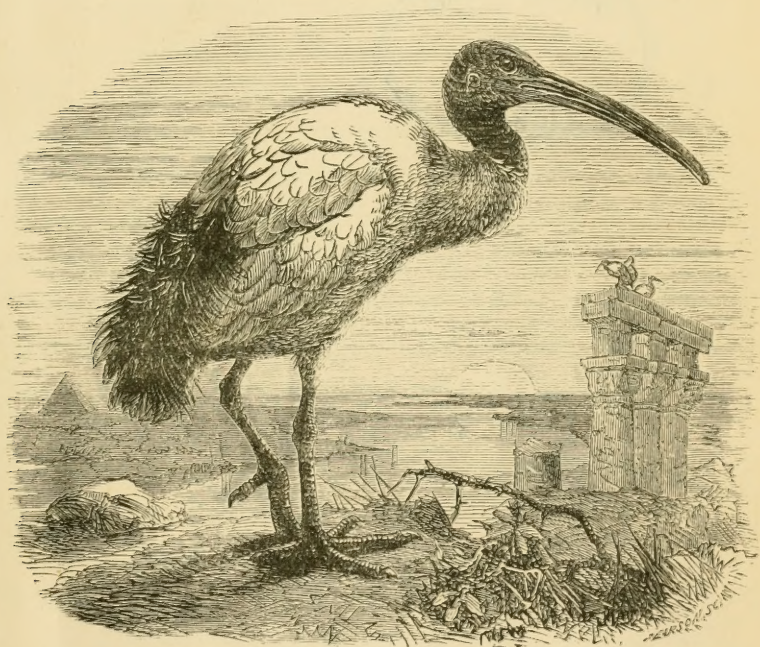
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THE IBIS,

A

QUARTERLY JOURNAL OF ORNITHOLOGY.

EDITED BY
PHILIP LUTLEY SCLATER, M.A., Ph.D., F.R.S.,
SECRETARY TO THE ZOOLOGICAL SOCIETY OF LONDON,
AND
HOWARD SAUNDERS, F.L.S., F.Z.S.



VOL. II. 1896.

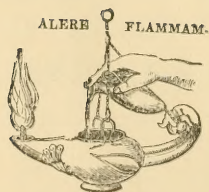
SEVENTH SERIES.

Non moriar, sed vivam, et narrabo opera Domini.

LONDON:

GURNEY AND JACKSON, 1 PATERNOSTER ROW.
(SUCCESSORS TO J. VAN VOORST.)

1896.



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PREFACE.

ON bringing the thirty-eighth volume of this Journal to a conclusion, the Editors of 'The Ibis' wish to express their thanks to the contributors who have rendered them assistance during the past year. On turning over the pages of the second volume of the Seventh Series it will be found that articles have been received from nearly every part of the globe, except perhaps from the United States, where an excellent periodical devoted to the same science naturally absorbs the energies of American ornithologists.

The Editors are always anxious to secure new contributors, and in the present volume they have been fortunate enough to succeed in doing this in several instances. It is sad to think of the severe losses among the older Members of the Union, but it is some alleviation to find that the younger men are disposed to come forward with aid.

As regards the general strength of the British Ornithologists' Union, nothing can be more satis-

factory than the steady increase in number at the close of every year. The List now issued shows that there are at the present time 291 Ordinary Members, and it is understood that several candidates are ready for election at the next Meeting.

P. L. S.

H. S.

London, October 1st, 1896.

BRITISH ORNITHOLOGISTS' UNION.

1896.

[An asterisk indicates an Original Member. It is particularly requested that Members will give notice to the Secretary of the Union, 10 Chandos Street, London, W., of any error in their addresses or descriptions in this List, in order that it may be immediately corrected.]

Date of
Election.

1896. ALEXANDER, BOYD ; Swifts Place, Cranbrook, Kent.
1893. ANNE, Major ERNEST L. S. ; 21 Victoria Square, Newcastle-on-Tyne.
1887. APLIN, FREDERICK CHARLES ; Bodicote, Banbury, Oxon.
1888. APLIN, OLIVER VERNON ; Bloxham, Banbury, Oxon.
- 5 1896. ARCHIBALD, CHARLES F. ; 9 Cardigan Road, Headingley, Leeds.
1885. BACKHOUSE, JAMES, F.Z.S. ; Daleside, Harrogate.
1892. BAKER, E. C. STUART ; District Superintendent of Police, Haflong, North Cachar, Assam, India ; care of H. S. King & Co.
1889. BALSTON, RICHARD JAMES, F.Z.S. ; Springfield, Maidstone.
1890. BARCLAY, FRANCIS HUBERT ; Knott's Green, Leyton.
- 10 1872. BARCLAY, Colonel HANBURY, F.Z.S. ; Tingrith Manor, Woburn, Bedfordshire.
1885. BARCLAY, HUGH G. ; Colney Hall, Norwich.
1889. BARRETT-HAMILTON, GERALD E. H., F.Z.S. ; Kilmannock House, New Ross, Wexford.
1881. BARRINGTON, RICHARD MANLIFFE, LL.B. ; Fassaroe, Bray, co. Wicklow.
1884. BEDDARD, FRANK E., M.A., F.R.S., F.Z.S., Prosector to the Zoological Society of London ; Zoological Gardens, Regent's Park, N.W.
- 15 1880. BIDWELL, EDWARD ; 1 Trig Lane, Upper Thames Street, E.C.
1884. BINGHAM, Lt.-Col. CHARLES T. (Indian Staff Corps), F.Z.S. ; care of Messrs. H. S. King & Co., 65 Cornhill, E.C.
1892. BIRD, The Rev. MAURICE C. H., M.A. ; Brunstead Rectory, Stalham, Norfolk.
1891. BLAAUW, F. E., C.M.Z.S. ; s'Graveland, Hilversum, Holland.
1893. BLAGG, ERNEST W. H. ; Greenhill, Cheadle, Staffordshire.

Date of
Election.

- 20 1896. BLAKENEY, ROBERT, R.E. ; Aldershot Camp.
 1873. BLANFORD, WILLIAM T., F.R.S., F.Z.S. ; 72 Bedford Gardens,
 Kensington, W.
 1893. BOLAM, GEORGE, F.Z.S. ; Castlegate, Berwick-on-Tweed.
 1894. BONHOTE, JOHN LEWIS ; 68 Lexham Gardens, Kensington, W.
 1878. BORRER, WILLIAM, M.A., F.L.S. ; Cowfold, Horsham.
- 25 1895. BRADFORD, Dr. J. ROSE, F.R.S. ; 52 Upper Berkeley Street,
 Portman Square, W.
 1885. BROCKHOLES, WILLIAM F. ; Claughton-on-Brock, Garstang,
 Lancashire.
 1890. BROOKE, HARRY BRINSLEY ; 33 Egerton Gardens, Kensington, W.
 1892. BROOKS, W. EDWIN ; Mount Forest, Ontario, Canada.
 1868. BUCKLEY, THOMAS EDWARD, B.A., F.Z.S. ; Rossal, Inverness,
 N.B.
- 30 1895. BULGARIA, H.R.H. FERDINAND, Prince of ; Sophia, Bulgaria.
 1872. BULLER, Sir WALTER LAWRY, K.C.M.G., Sc.D., F.R.S., C.M.Z.S. ;
 Wellington, New Zealand.
 1884. BUTLER, Lieut.-Col. E. A. ; Brettenham Park, Bideston, Suffolk.
 1896. BUTTERFIELD, W. C. J. RUSKIN ; Wilsden, Bradford, and
 10 Stanhope Place, St. Leonards-on-Sea.
 1884. BUXTON, GEOFFREY FOWELL ; Sunny Hill, Thorpe, Norwich.
- 35 1895. BUXTON, S. GURNEY, F.Z.S. ; Catton Hall, Norwich.
 1896. CADE, FRANCIS J. ; Teighmore, Cheltenham.
 1889. CAMERON, EWEN SOMERLED, F.Z.S. ; Terry, Montana, U.S.A.
 1896. CAMERON, JAMES S. ; 1st Bn. Royal Sussex Regt., Fermoy.
 1888. CAMERON, JOHN DUNCAN ; Low Wood, Bethersden, near Ashford,
 Kent.
- 40 1892. CAMPBELL, CHARLES WILLIAM, C.M.Z.S. ; H.B.M. Chinese
 Consular Service ; British Legation, Peking, China.
 *1858. CAMPBELL-ORDE, Sir JOHN W. P., Bart., F.Z.S., late Captain
 42nd (Royal Highland) Regiment ; Kilmory House,
 Lochgilphead, Argyllshire, N.B.
 1888. CARTER, JAMES ; Burton House, Masham, Yorkshire.
 1890. CAVE, CHARLES JOHN PHILIP, F.Z.S. ; Ditcham Park, Petersfield.
 1888. CHAMBERLAIN, WALTER, F.Z.S. ; Harborne Hall, Harborne,
 near Birmingham.
- 45 1894. CHANCE, A. MACOMB, Jun., B.A. ; Lawnside, Edgbaston,
 Birmingham.
 1884. CHAPMAN, ABEL ; 7 The Avenue, Sunderland.
 1894. CHAPMAN, EDWARD HENRY ; 17 St. Hilda's Terrace, Whitby.

Date of
Election.

1882. CHASE, ROBERT WILLIAM; Southville, Priory Road, Edgbaston, Birmingham.
1889. CLARKE, STEPHENSON ROBERT, F.Z.S.; Borde Hill, Cuckfield, Sussex.
- + 50 1880. CLARKE, WILLIAM EAGLE, F.L.S.; Museum of Science and Art, Edinburgh.
1895. COLES, RICHARD EDWARD; Oakfield, Milton, Lymington.
1880. COOPER, Lieut.-Col. E. H., F.Z.S.; 42 Portman Square, W.
1874. CORDEAUX, JOHN; Great Cotes, R.S.O., Lincoln.
1888. CORDEAUX, Captain WILLIAM WILFRID; (21st Hussars), Secunderabad, India.
- 55 1882. CORY, CHARLES B., F.Z.S.; Third National Bank, State Street, Boston, Mass., U.S.A.
1892. COURAGE, HAROLD MITCHELL; Snowdenham, Bramley, Guildford
1896. COWIE, Capt. ALEXANDER HUGH, R.E.; Stanhope Lines, Aldershot.
1896. CRAWFORD, FRANCIS C.; 4 Raymond Buildings, Gray's Inn, W.C.
1894. CREWE, Sir VAUNCEY HARPUR, Bt.; Calke Abbey, Derbyshire.
- 60 1896. CROCKETT, SAMUEL RUTHERFORD; Bank House, Penicuik, Midlothian.
1895. CROSSLEY, Sir SAVILE B., Bt., F.Z.S.; Somerleyton, Lowestoft, and 12 Carlton-House Terrace, S.W.
1882. CROWLEY, PHILIP, F.Z.S.; Waddon House, Waddon, Croydon.
1877. DALGLEISH, JOHN J.; Brankston Grange, Bogside Station, Stirling, N.B.
1896. DANFORD, BERTRAM W. Y., R.E.; St. Mary's Barracks, Chatham.
- 65 1874. DANFORD, CHARLES G., F.Z.S.; Hatszeg, Siebenbürgen, Hungary, and Conservative Club, St. James's Street, S.W.
1883. DAVIDSON, JAMES; Karwar, Kanara, Bombay, and 32 Drumshough Gardens, Edinburgh.
1891. DE VIS, C. W.; Queensland Museum, Brisbane, and care of B. Quaritch, 15 Piccadilly, W.
1893. DE WINTON, W. E.; Graftonbury, Hereford, and 7 Southampton Row, W.C.
1896. DEGLI ODDI, Count Ch. ETTORE ARRIGONI, Società del Casino Pedrocchi, Padua, Italy.
- 70 1896. DOBBIE, JAMES B., F.Z.S., 3 A Pitt Street, Edinburgh.

Date of
Election.

1889. DOBIE, WILLIAM HENRY, M.R.C.S.; 22 Upper Northgate Street, Chester.
1883. DOIG, SCROPE B.; Public Works Department, Bombay.
1895. DONOVAN, Surgeon-Capt. C., I.M.S., Civil Surgeon; Mangalore, South Canara, India.
1880. DOWSETT, ARTHUR, F.Z.S.; Castle Hill House, Reading.
- 75 1865. DRESSER, HENRY EELES, F.L.S., F.Z.S.; Topclyffe Grange, Farnborough, Beckenham, Kent.
1896. DREWITT, Dr. FREDERICK D.; 2 Manchester Square, W.
1890. DRUMMOND-HAY, JAMES A. G. (Coldstream Guards); Guards' Club, Pall Mall, S.W.
1878. DURNFORD, W. ARTHUR, J.P.; Elsecar, Barnsley.
1896. DUTHIE, Lt.-Col. W. H. M.; Row, Doune, Perthshire.
- 80 1870. ELLIOT, DANIEL GIRAUD, F.R.S.E., F.Z.S.; Field Columbian Museum, Chicago, U.S.A.
1895. ELLIOT, EDMUND A. S., M.R.C.S.; Woodville, Kingsbridge, South Devon.
1884. ELLIOTT, ALGERNON, Civil & Sessions Judge, Amraoti Camp, Berar, H.A.D., India.
1866. ELWES, HENRY JOHN, F.Z.S.; Colesborne Park, Cheltenham.
1895. ERLANGER, Freiherr CARLO VON; Nieder Ingelheim, Rhein Hessen, Germany.
- 85 1879. EVANS, ARTHUR HUMBLE, M.A., F.Z.S.; 9 Harvey Road, Cambridge.
1888. EVANS, WILLIAM, F.R.S.E.; 18A Morningside Park, Edinburgh.
1891. EVERETT, ALFRED HART, C.M.Z.S.; Labuan, Borneo.
1892. FAIRBRIDGE, WILLIAM GEORGE; 133 Long Market Street, Capetown.
1895. FALCONER, JOHN J. M.; Magdalene College, Cambridge.
- 90 1894. FARQUHAR, Commander ARTHUR M., R.N.; H.M.S. 'Buzzard,' North American and West Indian Station.
1873. FEILDEN, Col. HENRY WEMYSS, C.M.Z.S.; West House, Wells, Norfolk, and Junior United Service Club, St. James's, S.W.
1886. FERGUSON, Lieut. HAROLD STUART, Nair Brigade; Trevandrum, Travancore.
1891. FIELD, LEOPOLD; St. Stephen's Club, Bridge Street, Westminster, S.W.
1892. FINN, FRANK, B.A., F.Z.S.; Indian Museum, Calcutta.

Date of
Election.

- 95 1890. FISHER, LIONEL; Kandy, Ceylon.
 1884. FORBES, HENRY OGG, LL.D., F.Z.S.; Free Public Museums,
 Liverpool.
 1880. FOSTER, WILLIAM; Braeside, The Heath, Weybridge.
 1887. FOWLER, WILLIAM WEEKES, M.A.; Lincoln College, Oxford.
 1865. FOX, REV. HENRY ELLIOTT, M.A.; 12 South Bailey,
 Durham.
- 100 1881. FREKE, PERCY EVANS; Step House, Borris, co. Carlow.
 1895. FROHAWK, FREDERICK WILLIAM; 39 Dornton Road, Balham,
 S.W.
- 1881. GADOW, HANS, Ph.D., F.Z.S.; University Zoological Museum,
 Cambridge.
 1886. GAINSBOROUGH, CHARLES WILLIAM FRANCIS, Earl of; Exton
 Park, Oakham.
 1885. GALLWEY, Sir RALPH PAYNE, Bart.; Thirkleby Park, Thirsk.
- 105 1892. GERRARD, JOHN; Government Inspector of Mines; Worsley,
 Manchester.
 1879. GIBSON, ERNEST; care of Thos. Gibson, Esq., 1 Eglinton Court,
 Edinburgh.
 1879. GIBSON-CARMICHAEL, Sir THOMAS DAVID, Bart., F.Z.S.; Castle
 Craig, Dolphinton, N.B.
- *1858. GODMAN, FREDERICK DUCANE, F.R.S., F.Z.S.; 10 Chandos
 Street, Cavendish Square, W.
 *1858. GODMAN, PERCY SANDEN, B.A., C.M.Z.S.; Muntham,
 Horsham.
- 110 1874. GODWIN-AUSTEN, Lieut.-Col. HENRY HAVERSHAM, F.R.S.,
 F.Z.S.; Shalford House, Guildford.
 1884. GOODCHILD, JOHN G., F.Z.S.; Museum of Science and Art,
 Edinburgh.
 1895. GRABHAM, OXLEY, M.A.; Westfield, Flaxton, York.
 1886. GRAHAM, WILLIAM, F.Z.S.; Manor House, Crayford, Kent.
 1890. GRANT, WILLIAM R. OGILVIE; 26 Hereford Square, S.W.
- 115 1885. GUILLEMARD, F. H. H., M.A., M.D., F.Z.S.; Eltham, Kent.
 1876. GÜNTHER, ALBERT C. L. G., M.A., M.D., F.R.S., F.Z.S.;
 2 Lichfield Road, Kew Gardens, S.W.
- 1870. GURNEY, JOHN HENRY, F.Z.S.; Keswick Hall, Norwich, and
 Athenæum Club, Pall Mall, S.W.
 1896. GURNEY, ROBERT; Sprowston Hall, Norwich.
 1890. GWATKIN, JOSHUA REYNOLDS GASCOIGN; Manor House,
 Potterne, Devizes.

Date of
Election.

- 120 1891. HAIGH, GEORGE HENRY CATON ; Grainsby Hall, Great Grimsby,
Lincolnshire.
1887. HAINES, JOHN PLEYDELL WILTON ; The Lodge, Gloucester.
1886. HAMILTON, EDWARD, M.D., F.L.S., F.Z.S. ; 16 Cromwell Place,
S.W.
1883. HARCOURT, LEWIS VERNON ; Malwood, Lyndhurst, Hants.
1893. HARTERT, ERNST ; The Museum, Tring, Herts.
- 125 1868. HARTING, JAMES EDMUND, F.L.S., F.Z.S. ; Linnean Society,
Burlington House, Piccadilly, W.
1896. HARTLAND, JOHN COLES ; c/o Messrs. Hunt & Co., P.O. Box 11,
Yokohama, Japan.
1893. HARTMANN, WILLIAM ; Tangley Mere, Chilworth, Surrey.
1873. HARVIE-BROWN, JOHN A., F.Z.S. ; Dunipace House, Larbert,
N.B.
1887. HEBBERT, CHARLES T., F.Z.S. ; The Rhodrons, Hook, Kingston-
on-Thames.
- 130 1895. HINXMAN, LIONEL W., B.A. ; Geological Survey of Scotland,
Edinburgh.
1884. HOLDSWORTH, CHARLES JAMES, J.P. ; Kendal, Westmorland.
1877. HOLDSWORTH, EDMUND W. H., F.Z.S. ; South Town, Dart-
mouth, Devon.
1891. HOLLAND, ARTHUR H. ; Sta. Elena, Soler, Ferro-Carril al
Pacífico, Buenos Ayres, and Holmhurst, Copse Hill, Wim-
bledon, S.W.
1888. HORSFIELD, HERBERT KNIGHT ; Ivy Lodge, Chapel Allerton,
Leeds.
- 135 1893. HOSE, CHARLES, F.Z.S. ; Baram, Sarawak, Borneo.
1895. HOWARD, HENRY ELIOT ; Stone House, Kidderminster.
1881. HOWARD, ROBERT JAMES ; Hawkhurst, Blackburn, Lanca-
shire.
- *1858. HUDLESTON, WILFRID HUDLESTON, M.A., F.R.S., F.Z.S. ;
8 Stanhope Gardens, S.W.
1893. HUDSON, WILLIAM HENRY, C.M.Z.S. ; Tower House, St. Luke's
Road, Westbourne Park, W.
- 140 1869. HUME, ALLAN OCTAVIAN, C.B., C.S.I., F.Z.S. ; The Chalet,
Kingswood Road, Upper Norwood, S.E.
1890. HUNTER, HENRY CHARLES VICARS ; Mawley Hall, Cleobury
Mortimer, Salop.
1870. HYLTON, HEDWORTH HYLTON, Lord, F.Z.S. ; Merstham House,
Red Hill, Surrey.

Date of
Election.

1870. IRBY, Lieut.-Col. LEONARD HOWARD L., F.Z.S. ; 14 Cornwall Terrace, Regent's Park, N.W.
1888. JACKSON, FREDERICK J., F.Z.S. ; 13 Westbourne Square, W.
- 145 1892. JAMES, HENRY ASHWORTH ; 11 Oxford Square, Hyde Park, W.
1896. JESSE, WILLIAM ; La Martinière College, Lucknow, Oudh, India.
1889. JOHNSON, FREDERICK PONSONBY ; Castlesteads, Brampton, Cumberland.
1891. JOHNSTON, Sir HARRY HAMILTON, K.C.B., F.Z.S. ; Queen Anne's Mansions, Queen Anne's Gate, S.W.
1880. KELHAM, Major HENRY ROBERT (2nd Bn. Highland Light Infantry) ; Fyzabad, Oudh, India, and Roydon Lodge, Camberley, Surrey.
- 150 1894. KELSALL, HENRY JOSEPH, R.A. ; Aden.
1882. KERMODE, PHILIP M. C. ; Hillside, Ramsay, Isle of Man.
1891. KERR, J. GRAHAM ; Christ's College, Cambridge.
1895. KINGSFORD, WILLIAM EDWARD ; Ashdene, East Molesey, Surrey.
1882. KNUBLEY, Rev. EDW. PONSONBY, M.A. ; Staveley Rectory, Leeds.
- 155 1892. LAIDLAW, THOMAS GEDDES ; Bank of Scotland, Morningside Branch, Edinburgh, and 8 Morningside Road, Edinburgh.
1884. LANGTON, HERBERT ; 11 Marlborough Place, Brighton.
1881. LASCELLES, Hon. GERALD ; Queen's House, Lyndhurst.
1892. LA TOUCHE, JOHN DAVID DIGUES DE ; Chinese Imperial Maritime Customs, Foochow, China.
1892. LAWS, ARTHUR MOORE ; Buluwayo Engineering and Wagon Works, Buluwayo, Matabeleland, South Africa.
- 160 1885. LAWSON, GEORGE, C.B. ; 36 Craven Hill Gardens, Hyde Park, W.
1896. LEE, OSWIN, A. J. ; 58 Manor Place, Edinburgh.
1876. LEGGE, Col. WILLIAM VINCENT (late R.A.), F.Z.S. ; Cullenswood House, St. Mary's, Tasmania.
1868. LE STRANGE, HAMON, F.Z.S. ; Hunstanton Hall, King's Lynn, Norfolk.
1875. L'ESTRANGE, Col. PAGET WALTER, R.A. ; Llwynbedw, Boncastle, R.S.O., South Wales.
- 165 1893. LEWIS, FREDERICK ; Assistant Conservator of Forests, c/o The Forest Department, Colombo, Ceylon.

Date of
Election.

1889. LEYLAND, CHRISTOPHER JOHN; Haggerston Castle, Beal, Northumberland.
1874. LLOYD, Col. JOHN HAYES, F.Z.S.; 95 Adelaide Road, N.W.
1889. LOYD, Major ARTHUR PURVIS, F.Z.S. (late 21st Hussars); Hornham Cliff, Salisbury.
1896. LUBBOCK, PERCY; 72 Cadogan Gardens, S.W.
- 170 1877. LUMSDEN, JAMES, F.Z.S.; Arden House, Alexandria, N.B.
1896. LUTTMAN-JOHNSON, J. A., M.A.; 101 Mount Street, W.
1894. MACPHERSON, ARTHUR HOLTE; 51 Gloucester Terrace, Hyde Park, W.
1886. MACPHERSON, Rev. HUGH ALEXANDER, M.A.; 11 Victoria Place, Carlisle.
1875. MALCOLM, JOHN WINGFIELD, Lord, C.B., F.Z.S.; Poltalloch, Lochgilphead, Argyllshire, and 23 Great Cumberland Place, W.
- 175 1878. MARKS, HENRY STACY, R.A., F.Z.S.; 5 St. Edmund's Terrace, Regent's Park, N.W.
1894. MARSHALL, ARCHIBALD McLEAN; Crowhill, Innerwick, E. Lothian.
1894. MARSHALL, JAMES McLEAN; Crowhill, Innerwick, E. Lothian.
1878. MATHEW, Rev. MURRAY A., M.A., F.L.S.; Buckland Dinham, Frome, Somersetshire.
1896. MAXWELL, Sir HERBERT E., Bt., M.P.; 49 Lennox Gardens, S.W.
- 180 1883. MEADE-WALDO, EDMUND GUSTAVUS BLOOMFIELD, F.Z.S.; Rope Hill, Lymington, Hants.
1886. MILLAIS, JOHN GUILLE, F.Z.S.; Melwood, Horsham.
1879. MITCHELL, FREDERICK SHAW; Edmonton, Alberta, N. W. T., Canada.
1892. MIVART, St. GEORGE, Ph.D., M.D., F.R.S.; 77 Inverness Terrace, W., and Oriental Club, Hanover Square, W.
1890. MONK, THOMAS JAMES; St. Anne's, Lewes, Sussex.
- 185 1886. MUIRHEAD, GEORGE, F.Z.S.; Mains of Haddo, Aberdeen.
1893. MULLENS, WILLIAM H., M.A., F.Z.S.; 9 St. James's Place, S.W.
1892. MUNN, PHILIP WINCHESTER; Laverstoke, Whitechurch, Hants.
1885. NEALE, EDWARD; 43 Charlotte Street, Portland Place, W.
1882. NELSON, THOMAS HUDSON; Sandringham House, Redcar, Yorkshire.
- 190 1895. NESHAM, ROBERT; Utrecht House, Queen's Road, Clapham Park, S.W.

Date of
Election.

1876. NEVILL, HUGH; Newton Villa, Godalming.
1872. NEWCOME, FRANCIS D'ARCY WILLIAM CLOUGH; Feltwell Hall, Brandon, Suffolk.
- *1858. NEWTON, ALFRED, M.A., F.R.S., F.Z.S., Professor of Zoology in the University of Cambridge; Magdalene College, Cambridge.
- *1858. NEWTON, SIR EDWARD, K.C.M.G., M.A., F.L.S., C.M.Z.S.; 14 Wellington Esplanade, Lowestoft.
- 195 1891. NICHOLL, DIGBY SEYS WHITLOCK, F.L.S., F.Z.S.; The Ham, Cowbridge, Glamorganshire.
1886. NICHOLLS, HOWARD HILL JOHN, M.R.C.S.; The Moat, Eastbourne.
1876. NICHOLSON, FRANCIS, F.Z.S.; Oakfield, Ashley Rd., Altrincham.
1895. NOBLE, HEATLEY; Temple Combe, Henley-on-Thames.
1887. NORMAN, GEORGE CAMERON, F.Z.S.; 68 Lombard Street E.C., and Bredon's Norton, Tewkesbury.
- 200 1882. OATES, EUGENE WILLIAM, F.Z.S.; Mandalay, Burma.
1892. OGILVIE, FERGUS MENTEITH, M.A., F.Z.S.; 5 Evelyn Mansions, Carlisle Place, Victoria Street, S.W.
1889. OGLE, BERTRAM SAVILE; Hill House, Steeple Aston, Oxford.
1883. PARKER, HENRY, C.E., F.Z.S., Irrigation Officer, P.W.D.; Kurunegala, Ceylon.
1880. PARKIN, THOMAS, M.A., F.Z.S.; Fairseat, High Wickham, Hastings.
- 205 1891. PATTERSON, ROBERT; Tilecote, Malone Park, Belfast.
1884. PATTERSON, R. LLOYD, F.L.S.; Croft House, Holywood, co. Down.
1894. PEARSON, CHARLES EDWARD; Chilwell House, near Nottingham.
1891. PEARSON, HENRY J.; Bramcote, Notts.
1891. PENROSE, FRANK, M.D.; 4 Harley Street, W.
- 210 1886. PHILLIPS, E. LORT, F.Z.S.; 79 Cadogan Square, S.W.
1888. PHILLIPS, GEORGE THORNE; Wokingham, Berkshire.
1893. PIGOTT, THOMAS DIGBY, C.B.; 5 Ovington Gardens, S.W.
1896. PIKE, ARNOLD, F.Z.S.; c/o Miss Pike, 65 Cadogan Place, S.W.
1893. PIKE, THOMAS MAYER, M.A.; care of Mr. Porter, 7 Prince's Street, Cavendish Square, W.
- 215 1896. POPHAM, HUGH LEXBORNE; Templeton, Hungerford, and Oxford & Cambridge Club, Pall Mall, S.W.
1888. POWYS, MERVYN OWEN WAYNE, B.A., F.Z.S.; 2 Tenterden Street, Hanover Square, W.

Date of
Election.

1893. PYCRAFT, WILLIAM PLANE ; Department of Comparative Anatomy, University Museum, Oxford.
1888. RADCLYFFE, CHARLES ROBERT EUSTACE ; 1st Life Guards, and Hyde, Wareham, Dorset.
1879. RAWSON, HERBERT EVELYN, F.Z.S. ; Fallbarrow, Windermere.
- 220 1894. READ, RICHARD HENRY, L.R.C.P., M.R.C.S. ; Church Street, Hanley.
1888. READ, ROBERT H. ; 7 South Parade, Bedford Park, W.
1877. REID, Capt. SAVILE G. (late R.E.), F.Z.S. ; The Elms, Yalding, Maidstone.
1893. RENDALL, PERCY, M.D., F.Z.S. ; Devonshire Club, St. James's Street, S.W.
1895. RICKETT, CHARLES BOUGHEY ; Hong Kong and Shanghai Bank, Foochow ; care of H. S. King & Co.
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- † 230 *1858. SALVIN, OSBERT, M.A., F.R.S., F.Z.S. ; 10 Chandos Street, W., and Hawksfold, Fernhurst, Haslemere.
- 1870. SAUNDERS, HOWARD, F.L.S., F.Z.S. ; 7 Radnor Place, Hyde Park, W.
- *1858. SCLATER, PHILIP LUTLEY, M.A., Ph.D., F.R.S. ; Secretary to the Zoological Society of London ; 3 Hanover Square, London, W., and Odiham Priory, Winchester.
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- 20 1896. WINGE, HERLUF; University Zoological Museum, Copenhagen.

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ERRATA.

Page 24, line 3 from the bottom, *for* fig. 1 *read* fig. 2.

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Page 260, line 12 from top, and page 287, line 10 from the bottom, *for*
Druitt *read* Drewitt.

Page 422, last line, *for* forty-eight *read* eighty-four.

Page 434, line 7 from top, *for* *Opornis* *read* *Oporornis*.

THE IBIS.

SEVENTH SERIES.

No. V. JANUARY 1896.

I.—*Remarks on the Stereornithes, a Group of Extinct Birds from Patagonia.* By CHAS. W. ANDREWS, F.G.S.*

THE discovery of the existence of large flightless birds in South America at the time of the deposition of the lower Tertiary strata in that region is one of the most interesting that have been made in recent years, and the abundance and variety of the remains already brought to light give great promise of future large additions to our knowledge of the group.

In 1887 Señor Florentino Ameghino, to whom we are indebted for many papers on the remarkable fossil mammals of South America, described the anterior portion of the lower jaw of a large animal which he supposed to be an edentate mammal, and to which he gave the not very euphonious name *Phororhacos longissimus*. It is perhaps not too much to say that if no further discoveries had been made no one would have ventured to attribute this fragment to a bird. In 1891, however, the same author, having obtained a considerable number of other bones, announced that they belonged to a gigantic bird; but, owing to the incompleteness of his material, some of the characters given, such as the

* Read in abstract before Sect. D at the Meeting of the British Association at Ipswich, on September 13th, 1895.

presence of teeth and of a helmet-like crest on the skull, were incorrect, as he himself has since stated.

In 1891, also, MM. Moreno and Mercerat published a catalogue of the bird remains in the Museum of La Plata, giving a number of photographic plates, but, unfortunately, no descriptions. In this paper many generic names seem to have been employed on quite insufficient grounds. For the reception of the larger, presumably flightless forms, the authors established a separate order, the "Stereornithes," which, again, they divided into four families, Brontornithidæ, Stereornithidæ, Dryornithidæ, and Darwinornithidæ. Probably, also, some of the genera placed by them under the Accipitres belong to this order. The name "Stereornithes" is now generally adopted, and some authors have included under it the Gastornithidæ.

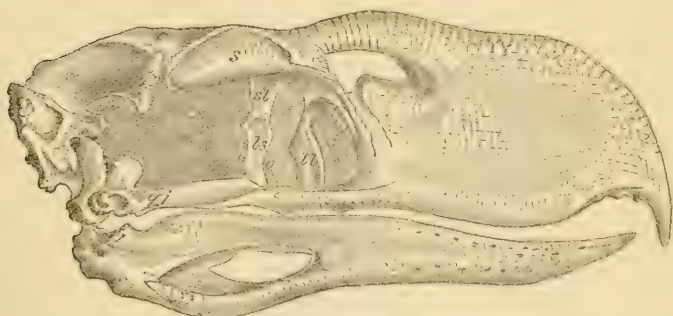
Dr. Gadow considers that the Stereornithes are ancestral forms of the Ratitæ, and further that *Mesembriornis* is the direct forerunner of *Rhea*. Ameghino and Lydekker have also regarded them as Ratites, but the latter, having had an opportunity of examining an incomplete skull, and finding that the quadrate has a double head for articulation with the skull, has changed his opinion and now considers them as modified Carinates. Probably, in the strict sense of the word, many of these birds are "ratite," but the gradual loss of the power of flight and the consequent reduction of the pectoral muscles might lead to the loss of the keel of the sternum in any "carinate" bird.

Up to the present year all these various conjectures as to the nature of these birds were founded on some limb-bones and some very small portions of the skull, but lately Ameghino has published a very valuable paper descriptive of a large series of remains, including the greater part of the skeleton (except, unfortunately, the sternum), of some of these giant birds*. The genus most completely known is *Phororhacos*, and it is to this that the following remarks chiefly refer.

* "Sur les Oiseaux fossiles de Patagonie." Bol. Inst. Geogr. Argent. xv., cahiers 11 et 12. Buenos Ayres, 1895.

The skull of *Phororhacos* (figs. 1, 2) is of the most extraordinary appearance and size, that of the largest species, *Ph. longissimus*, measuring about two feet in length. The cranial portion is much depressed, while the rostral region is much compressed from side to side, somewhat as in the Puffin. The beak is hooked, like that of a raptorial bird, and its margin at the commencement of the decurved portion bears two or three serrations. The orbit is said to be completely continuous with the antorbital fossa. The mastoid processes are very prominent, giving the hinder portion of the skull somewhat the appearance of that of

Fig. 1.



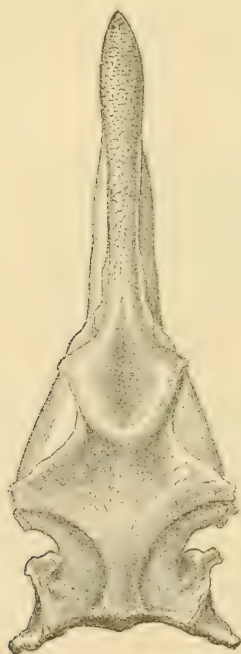
Skull of *Phororhacos inflatus*. $\frac{1}{4}$ nat. size.
(From Ameghino.)

Phalacrocorax, although in most other respects it is quite dissimilar. The temporal fossæ are very large, and are separated one from another only by a short interval. The quadrate is very large, and articulates with the skull by a double head. The mandible is extremely massive; its angle is truncated, as in the Storks, Accipitres, and many other birds. The anterior extremity is upturned: in this respect the mandibles of *Psophia* and *Mycteria* have been compared with the fossil, but in the former only the lower margin curves slightly upward at the extremity, and in the latter, as in the Avocet, although the mandible turns upward it is accompanied by the upper beak, which does not curve down over its extremity. The only living bird which I have been

able to find that resembles *Phororhacos* in this point is the remarkable Stork, *Baleniceps rex*, in which also the beak is extraordinarily large.

It is unfortunate that the ventral surface of the skull is unknown, so that further material must be awaited before the important characters of that region are available for comparison with other forms.

Fig. 2.



Skull of *Phororhacos inflatus* from above. $\frac{1}{4}$ nat. size.
(From Ameghino.)

When it is remembered that the systematic position of many recent birds, the anatomy of which is well known, is the subject of great diversity of opinion, it can hardly be supposed that it will be possible to attain any certainty as to the affinities of these extinct forms, of which even the skeleton is incompletely known. Nevertheless a comparison

with other birds, recent and fossil, may give valuable indications of the probable direction in which the nearest relatives of the extinct species should be sought; but all conclusions derived from such comparisons must necessarily be regarded as only provisional, and subject to revision on the discovery of more perfect specimens.

Comparison of the skull of *Phororhacos* with as much as is known of that of *Gastornis* does not seem to reveal sufficient resemblances to justify the inclusion of the latter in the Stereornithes. The more important differences are:—

(1) The presence of teeth in *Gastornis*, the former statement that these exist in *Phororhacos* having been ascertained to be erroneous.

(2) The small size of the temporal fossæ and the sloping occipital surface of *Gastornis*.

(3) The great length of the parietal region in the European bird, giving the skull an aspect totally different from that of *Phororhacos*.

(4) The presence of a pointed angular process in the mandible of *Gastornis*.

Another point which tells against the association of the Gastornithidæ with the Stereornithes is that, although both are said to occur in the Lower Eocene, the associated mammalian fauna renders it almost certain that the so-called Lower Eocene of South America is of a much later date, and is probably synchronous with some part of the Miocene elsewhere. With regard to *Dasornis* all that can be said is that the cranium is much depressed, as in *Phororhacos*, but the specimen upon which the genus was founded is so imperfect that even its avian nature has been called into question.

The skull in the Ratitæ differs from that of *Phororhacos* mainly in the presence of a single head to the quadrate. The beak, also, is much depressed, except in *Casuaris* and *Apteryx*, and the nostrils impervious. The angle of the mandible is truncated, as in the Stereornithes.

The skulls of *Hesperornis* and *Ichthyornis* are sharply separated from that of *Phororhacos* by the possession of

teeth, and are different in many other respects. It may here be remarked that *Hesperornis* cannot be an ancestral form of the Stereornithes, since it is already too specialized (*e. g.* in the extreme reduction of the wings).

In his description of the skull Ameghino lays much stress on the fact that the orbit is not at all separated from the antorbital fossa; but since the lachrymal is commonly very loosely united to the skull, it might easily have been somewhat displaced in the fossil, and it may be suggested that the bone described as the supraorbital may, in fact, be the lachrymal. The descending lamina, marked *sl* in the figure (p. 3), would then correspond to the descending process of the lachrymal, which in most birds forms a more or less complete division between the orbit and antorbital fossa, as in many birds this process unites inferiorly with the jugal. The bone marked *ll*, and regarded as a descending portion of the lachrymal, would then probably be a portion of the ethmoid. In this region of the skull of *Phororhacos* there seems to be a certain resemblance to that of the *Seriema* (*Cariama*). In this form also the lachrymal sends down a branch, which is connected with the jugal by a small distinct rod-like element, described long ago by Burmeister* and apparently occurring in *Cariama* only. In Ameghino's figure there is some indication that the element marked *ls* may also be distinct; and if it should turn out that this is the case, it would be a point of some interest. In *Cariama* also, in front of this boundary of the orbit and at the bottom of the antorbital fossa, there is another vertical bar of bone, which consists of a portion of the ethmoid and would correspond with that marked *ll* in the figure. In *Psophia* the lachrymal is small and does not extend to the jugal. In both *Psophia* and *Cariama* the angle of the mandible is truncated. In *Cariama* the nostrils are pervious, as they also appear to be in the fossil, although the septum may have been lost. In *Chauna* also the lachrymal is small and does not extend to the jugal, and the mandible has a very large angular process. *Cathartes*, again, differs in many respects, though in the form of the nostrils

* "Beitr. z. Naturgesch. d. *Seriema*," in Abh. nat. Ges. z. Halle, i. p. 11 (1854).

and the outline of the upper mandible there is some likeness to *Phororhacos*.

The vertebrae have articular faces of the usual avian form. They are penetrated by pneumatic foramina, and the dorsals and some of the cervicals bear median hæmapophyses. The most remarkable point is that some of the dorsals and all the caudals have their centra perforated by a remnant of the notochord. The posterior caudals, which are said to be procœlous, do not unite to form a pygostyle; this character, as in the Ratitæ, is probably "pseudoprimitive." In *Hesperornis* also the posterior caudals do not unite, but in this case their elongated transverse processes convert the tail into a paddle-like organ quite unlike that of *Phororhacos*.



Pelvis of *Phororhacos inflatus*. $\frac{1}{6}$ nat. size.
(From Ameghino.)

The pelvis of *Phororhacos* (figs. 3, 3a) is remarkably long and narrow, and at first sight has some resemblance to those of *Hesperornis* and *Colymbus*, but on comparison is found to differ in nearly every point. For example, in neither of these birds do the pre-acetabular portions of the ilia unite in a crest above the neural spines. In *Hesperornis* the

ischium does not unite posteriorly with the ilium nor the pubis with the ischium. In *Phororhacos* the pubis is very small, and indeed, except for the short distance during which it forms the inferior boundary of the passage for the *obturator internus* muscle, it fuses with the lower border of the ischium, beyond which it does not seem to have extended, although the posterior prolongations may have been broken away. The compressed form of the pelvis and the elongation of the post-acetabular portions of the ilium are notable. Prof. Milne-Edwards has remarked that the larger the pre-acetabular ilium the better a bird is adapted for walking, while the post-acetabular portion increases in length in proportion as the bird is better adapted for swimming. This, no doubt, is generally true, and is well illustrated in *Hesperornis* and *Podicipes*, in the former of which the post-acetabular ilium is about three times the length of the pre-acetabular portion, and in the latter about twice as long. In *Phororhacos* the proportions are nearly as in *Podicipes*, but, considering its long powerful legs and digits provided with hooked claws, it is difficult to imagine that it was a good swimmer. The pelvis of *Cariama*, though shorter and broader in the post-acetabular region, is nevertheless somewhat similar to that of *Phororhacos*, and this likeness is more striking when the pelvis is viewed from the side. The relation of the ischium to the ilium is exactly similar, and the pubis, which is extremely slender, is closely applied to the ventral border of the ilium, with which, however, it is not co-ossified in the specimen examined. The posterior extremities of the pubes extend beyond the ischia and are expanded: in the fossil these may easily have been lost. The pelvis of *Psophia* is not so similar, and those of the Tinamou and of *Cathartes* are still more unlike.

The femur is long, straight, and comparatively slender. The head rises above the slightly developed trochanter; in this respect the bone is similar to that of *Gastornis* (although in that bird the trochanter is much larger) and *Phalacrocorax*. In *Grus*, *Cariama*, *Psophia*, and *Aptornis* the trochanter is largely developed and rises above the head. In

Chauna and *Cathartes* the neck is exceedingly short and stout, and the distal extremity slightly expanded. In all the Ratitæ this bone is considerably stouter in proportion to its length and differs in other respects.

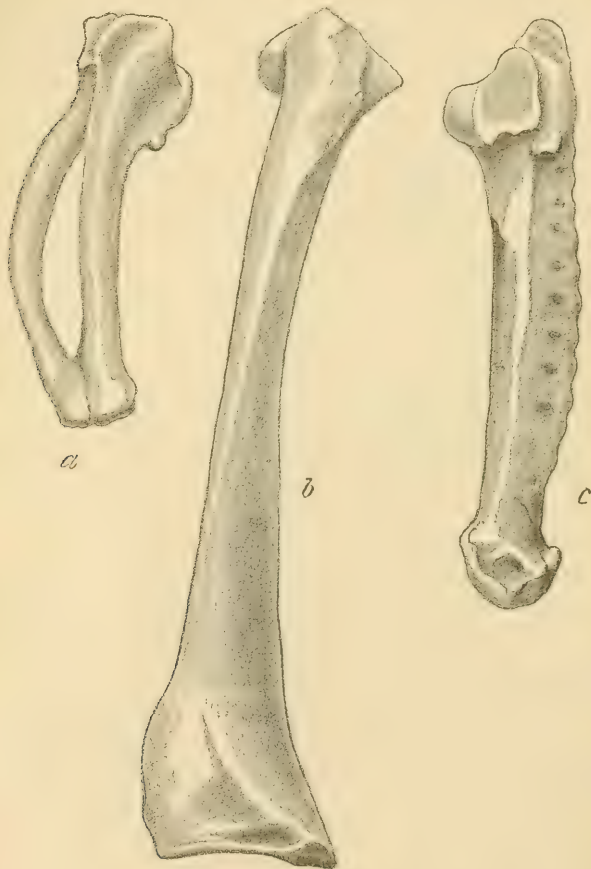
The tibio-tarsus of *Phororhacos* is about twice as long as the femur, and is straight and slender. The distal condyles are subequal and the intercondylar groove is shallow. The bridge over the groove for the extensor tendons lies towards the inner border of the bone and is somewhat oblique. In *Cariama* the tibio-tarsus is more slender and is more than twice the length of the femur. The extensor bridge is somewhat less oblique, and the intercondylar groove is shallower than in the fossil. The crest for the attachment of the fibula (not shown at all in the figure of the fossil) is prominent. The tibia is considerably different at its lower end from that of *Gastornis*, in which the bridge is median, the groove deep, and the lower end as a whole somewhat inflected, closely resembling that of an Anserine bird. In all the Ratitæ the intercondylar groove is shallow, and except in the Dinornithidæ the extensor bridge is wanting. In some of the smaller members of the latter genus the resemblance to the fossil is considerable.

The metatarsus and, indeed, the tibia also of *Phororhacos* have already been compared with the corresponding bones in the Ratites and in some of the Carinates by Dr. Gadow. Here it will be sufficient to mention that in the structure of the hypotarsus and in the arrangement of the distal trochleæ it agrees in some respects with *Cariama*. In this bird, however, the bone as a whole is more slender than in *Phororhacos*. The latter, in the whole structure of the limb, differs widely from *Hesperornis* and *Colymbus*, to which the form of the pelvis might lead one to expect some similarity. From *Cathartes* and the Tinamou there are also great differences. The digits of *Phororhacos* are provided with powerful hooked claws unlike those found in any of the Ratitæ.

The coracoid (fig. 4, *b*, p. 10) is remarkably long and slender. In general form it resembles that of some Gallinaceous birds; in any case it is quite unlike that of any of the Ratitæ, in

which this bone is usually broad and flat, and possessed of a more or less well-developed precoracoid process (except in *Apteryx*, in which it is rudimentary). This great difference

Fig. 4.



Phororhacos inflatus. $\frac{3}{4}$ nat. size.
a. metacarpus; b. coracoid; c. ulna.
(From Ameghino.)

in the form of the coracoids constitutes, in my opinion, one of the greatest difficulties in the way of supposing that the Ratitæ are descended from these extinct forms. The Ratite

shoulder-girdle seems more primitive, and it is difficult to suppose that its condition is secondary and due to retrogression, or, in other words, that it is "pseudoprimitive." In most of the Gruiformes the coracoid is short and stout, but in *Cariama* the bone is comparatively slender and the hyosternal process reduced.

The humerus in *Phororhacos* is much reduced, and is short and stout. The upper end is not figured, but the lower is remarkable for the obliquity of the distal border, the inner margin being prolonged into a pointed process which extends below the articular surfaces. The distal extremity is somewhat similar to that of the humerus of *Aptornis*, which also is oblique, but without the acute internal angle. The continuity of the articular surfaces is probably merely the result of reduction; the same condition is well shown in the humerus of *Casuarinus*.

The ulna (fig. 4, c) is short, stout, and compressed. The tubercles marking the points of insertion of the secondaries are strongly developed: these do not occur in the Ratitæ. There is a well-developed olecranon process.

The metacarpal (fig. 4, a) is of the usual avian form, but as in some Ratites the distal ends of metacarpals 2 and 3 are not so firmly fused as in most Carinatae.

The wings of *Phororhacos*, though so much reduced that the power of flight was almost certainly wanting, were nevertheless powerful organs with apparently well-developed remiges. Most likely they were employed as aids in running or possibly in swimming, though the latter seems unlikely.

Señor Ameghino unfortunately does not state upon what evidence the various bones are referred to *Phororhacos*, but, assuming that they are correctly determined*, the comparison given above shows that there is not much reason for supposing that any close relationship exists between *Phororhacos* and the Gastornithidæ, and the difference of the age of the deposits in which they respectively occur renders such relationship the more improbable.

* I have lately been informed that the bones described under the name *Phororhacos inflatus* nearly all belonged to a single individual.

The Ratitæ are in many respects more primitive, and not improbably were already sharply separated from the Carinatae when the Stereornithes arose.

The absence of specimens of the Stereornithes from European museums is much to be regretted, since without actual examination of the bones it is rash to express any definite opinion as to the affinities of the group. Nevertheless, in the meantime it may be suggested that some at least of the Stereornithes may form a specialized offshoot of the stock which gave rise to the Neotropical Gruiformes: possibly some affinities to the Ralliformes may also be found.

Besides *Phororhacos*, Ameghino describes several other genera, including *Brontornis*, *Pelecyornis*, *Liornis*, and *Callornis*, but, in the absence of sufficient material, much less completely. Most likely the number of genera will have to be increased by the retention of some of those founded by Moreno and Mercerat, which have been placed by Ameghino among the synonyms of *Phororhacos*—e. g., *Dryornis*, of which the humerus, as figured, is totally unlike that of *Phororhacos*. Certain of these genera differ so widely one from another that their reference to distinct families seems quite justifiable. Indeed, the Stereornithes seem to be a heterogeneous group of birds in all of which the wings were reduced and the bulk increased through the operation of some peculiar local conditions; for instance, the land which they inhabited may have been an island on which no large carnivorous animals occurred. A similar example is offered by New Zealand, where the Dinornithidæ, *Apteryx*, *Aptornis*, and *Cnemiornis* (all flightless birds of large size, belonging to several distinct orders) were formerly found. Indeed, there seems no reason why at any time, from the late Secondary period onward, and in any region, similar groups of flightless birds might not have arisen under favourable circumstances. The Gastornithidæ may be another instance of such. In most cases such specialized races die out without leaving any descendants when the peculiar conditions to which they have become adapted pass away; but the modern Ratitæ may be survivors of one or several ancient groups of such flightless birds.

II.—*Further Notes on the Birds of Aden.*

By Lieut.-Col. J. W. YERBURY, R.A., F.Z.S.

(Plate I.)

So much has already been written by the late Mr. Barnes (*Ibis*, 1893, pp. 57 & 165) and by myself (*Ibis*, 1886, p. 11 *et seqq.*) about the physical aspect of the country in the neighbourhood of Aden that it is necessary to say but little more on that subject. Haithalhim, which was formerly one of my favourite hunting-grounds in this district, has been, I regret to say, almost entirely spoiled by floods. The irrigation works have been destroyed and half the garden has been carried away; the trunks of big tamarind-trees, 15 feet or more in circumference, are to be seen lying in the river-bed, while the remaining trees are either dead or dying. I was unlucky in the time that I selected for visiting Lahej, as, owing to the drought, the country was quite burnt up, the jowari and other crops having in great measure failed in consequence. I must add a few words of explanation as to why so little was done ornithologically during my recent trip. When I decided to visit Aden I determined to direct my attention chiefly to the following groups—Diptera, Mammals, and Reptiles,—and only to collect such birds as appeared in the Aden list as “species incertæ,” or which I did not recognize. On showing a list of Aden birds to Dr. Sharpe before going out and asking him to tick off the desiderata, I found my field of work considerably increased, though even then I was glad to see not enough to necessitate systematic collecting. Specimens of many common species, however, were obtained, as at times it was necessary to feed the skinner (taxidermist, as he loved to style himself), when there were no mammals or good birds for him to work at. But after all a great deal still remains to be done ornithologically in the neighbourhood, while a visit to the mountains inland would probably produce unknown treasures.

It having been suggested that the addition of a few words regarding the localities of the present collection is necessary, I now give them. The bulk of my collection was made round about three places, viz.:—Shaik Othman, about five miles

from the Barrier Gate; Al Hautah or Lahej, 19 miles off; and Haithallhim, roughly 25 miles away. Aden itself yielded little but shore-birds. Aden has, however, many human visitors "passing on migration"; and as most of these land and drive to the tanks, a word regarding the birds likely to be seen there may be of interest. The species will be few, and the following list will probably include all, viz.:—*Neophron percnopterus* and *Milvus ægyptius* en route, while at the tanks the following are almost certain to be met with: *Columba livia*, *Turtur senegalensis*, *Passer domesticus*, *Pycnonotus xanthopygius*, *Myrmecocichla melanura*, and *Ptyanoprogne obsoleta*; *Hyphantornis galbula* and *Passer euchloris* are both close by, and may also be seen. Other birds, of course, resort to the tanks occasionally, but their visits are few and far between. On returning to the ship *Larus hemprichi* is certain to be seen round about.

I. ACCIPITRES.

1. VULTUR MONACHUS, Linn.

Gyps fulvus, Barnes, Ibis, 1893, p. 63.

A pair of large Vultures were seen in the Maala plain, Aden, on February 15th, but not shot at; the only occasion on which these birds were met with during my recent visit. The Vulture referred to by Barnes as being in the possession of Mr. Still at Aden is now in the Zoological Society's Gardens, and has been identified as *Vultur monachus**; but it is possible that some species of *Gyps* may also occur there.

2. NEOPHRON PERCNOPTERUS (Linn.); Yerbury, Ibis, 1886, p. 13; Barnes, Ibis, 1893, p. 64.

On reference to my old notes I find this species recorded as having been seen at Aden in every month of the year, whence my conclusion that it was a resident and bred there. On talking the matter over with Capt. Shopland and Capt. Nurse, both these gentlemen stated that in their experience the numbers of this species diminished considerably during the hot weather. It is probable therefore that Barnes is

* [See P. Z. S. 1892, p. 716. The specimen was presented by Mr. W. H. Still, of Aden.—P. L. S.]

correct in saying that this Vulture does not breed in Aden, the large rookeries seen in many parts of the peninsula being roosting- and not nesting-places. Capt. Shopland told me that he had sent a native up to one of these rookeries, but that no nests were to be found.

3. *CIRCUS MACRURUS* (S. G. Gm.); Sharpe, Cat. B. Brit. Mus. i. p. 67 (1874).

a. ♂. Lahej, March 10, 1895.

Common inland at Aden.

4. *MELIERAX POLYZONUS* (Rüpp.); Barnes, Ibis, 1893, p. 67.

Not uncommon round Lahej.

5. *ACCIPITER NISUS* (Linn.); Barnes, Ibis, 1893, p. 65.

a. ♂. Lahej, March 8, 1895.

Not uncommon in the Aden district.

6. *AQUILA IMPERIALIS* (Bechst.); Barnes, Ibis, 1893, p. 66.
Recorded by Barnes, but not met with by me.

7. *AQUILA CHRYSÆTUS* (Linn.); Barnes, Ibis, 1893, p. 65.

An Eagle seen on the plateau below Shum-shum, sailing along the edge of the cliffs bordering the deep nullah running into the tanks, was probably of this species.

8. *HALIAETUS LEUCOGASTER* (Gm.); Barnes, Ibis, 1893, p. 66.

Recorded by Barnes, but surely a most unlikely bird to be found near Aden.

9. *MILVUS ÆGYPTIUS* (Gm.); Yerbury, Ibis, 1886, p. 14; Barnes, Ibis, 1893, p. 67.

A resident species, very common and generally distributed. It breeds everywhere in the neighbourhood—in Aden on the cliffs, at Lahej and Shaik Othman in the small trees. A nest found at the latter place in March 1895 contained only one egg; it was situated in a tree, about 25 feet from the ground.

10. *ELANUS CÆRULEUS* (Desf.); Barnes, Ibis, 1893, p. 67.

Not uncommon at the edge of the desert round Lahej (Al Hautah).

11. *FALCO PEREGRINUS*, Gm.; Barnes, *Ibis*, 1893, p. 64.

Recorded by Barnes, but, as no specimen was collected, the identity of the species is by no means established.

12. *FALCO PUNICUS*, Levaill.; Gurney, *List of B. of Prey*, p. 107.

Falco barbarus, Barnes, *Ibis*, 1893, p. 64.

Dr. Sharpe informs me that he considers his former identification of Barnes's bird may be incorrect, and that the identification of Lord Lilford, as given in the editorial note (*Ibis*, 1893, p. 65), is right. I never met with the species myself in the neighbourhood of Aden, but a young bird given to me by Mr. Chevallier is apparently an immature *F. punicus*. This bird was shot in September 1894, and is said to have played havoc among the Pigeons on Telegraph Hill for some time before it was killed.

13. *TINNUNCULUS ALAUDARIUS* (Gm.) ; Barnes, *Ibis*, 1893, p. 65.

Cerchneis, sp. inc., Yerbury, *Ibis*, 1886, p. 13.

A young male was shot at Lahej on Nov. 21st, 1894, by Capt. Nurse. The Kestrel is not uncommon at Aden. I paid a visit to the site of the nest mentioned in my former paper, but did not see the birds anywhere in its vicinity.

14. *PANDION HALIAËTUS* (Linn.); Yerbury, *Ibis*, 1886, p. 14; Barnes, *Ibis*, 1893, p. 66.

I did not meet with the Osprey during my recent visit, but I think there is no doubt that it is resident and breeds in the peninsula.

II. STRIGES.

15. *BUBO MILESI*, Sharpe, *Ibis*, 1886, p. 163, pl. vi.

A single specimen, said to have been shot at Haithalhim, was given to me by Mr. Chevallier. It agrees with the types of *B. milesi* in the British Museum. Dr. Bowdler Sharpe says of this Aden specimen:—"I notice that Mr. Gurney (*Ibis*, 1890, p. 262) suggests the identity of *Bubo milesi* with *Otus abyssinicus* of Guérin. This may be the case, but until an example of *B. milesi* has been compared

with Guérin's type it will be impossible to decide the question, for his description might be made to fit a dozen species of Owl. The figure given in the 'Atlas,' pl. iii., certainly looks like *B. milesi*, but is so bad that nothing can be made of it. The description may answer for *Asio butleri* of Hume, and I think that this is the bird which Heuglin refers to as *Otus abyssinicus*."

16. CARINE, sp. inc., Yerbury, Ibis, 1886, p. 14; Barnes, Ibis, 1893, p. 68.

I did not meet with this Owlet during my recent trip. When camped at Haithallhim, at the end of March, Owlets were to be heard nightly, but the light was too bad to admit of a specimen being shot.

17. ASIO ACCIPITRINUS (Pall.); Sharpe, Cat. B. Brit. Mus. ii. p. 324.

A specimen of the Short-eared Owl has been obtained by Mr. Chevallier.

18. SCOPS GIU (Scop.); Barnes, Ibis, 1893, p. 68.

Recorded by Mr. Barnes.

19. STRIX FLAMMEA, Linn.; Yerbury, Ibis, 1886, p. 14; Barnes, Ibis, 1893, p. 68.

I saw the Barn-Owl several times when camped at Haithallhim. A specimen killed on the 16th of March, 1895, was shot by mistake under the impression that it was of another species, and the skin was made into a screen. The Owls reputed to inhabit the neighbourhood of the houses of the Agents of the P. & O. and M. M. Companies are probably of this species.

III. PICARIÆ.

20. CYPSELUS MELBA (Linn.).

Micropus melba, Hartert, Cat. B. Brit. Mus. xvi. p. 438 (1892).

Cypselus, sp. inc., Yerbury, Ibis, 1886, p. 15; Barnes, Ibis, 1893, p. 69.

The Swifts obtained by me at Lahej in March 1883 are entered in the British Museum Catalogue as of this species.

When I first arrived at Lahej, early in March 1895, a considerable number of Swifts were to be seen daily, and from their size I should say they were undoubtedly of this species; they all disappeared before the end of the month. At Shaik Othman, on the 3rd and 4th of April, a flock of Swifts was flying about over the village. I watched these birds for some time, but could not detect any white on their underparts, and I know that I have a similar note in my diary of 1885 regarding a flock seen at the tanks in Aden, but I cannot now verify the date; it is possible, therefore, that *C. apus* also occasionally visits the neighbourhood of Aden.

21. *CYPSELUS AFFINIS*, Hardw.

Micropus affinis, Hartert, Cat. B. Brit. Mus. xvi. p. 453 (1892).

I met with examples of this species on two occasions hawking about over the bed of the Wady Sugher. The first was near Lahej on the 12th of March. On this occasion I fired three reduced charges (*vide* Hume, 'Indian Ornithological Collector's Vade Mecum') without result, and the flock declined to wait for further attentions. The second occasion was near Haithalhim on the 23rd of March, when I had only a butterfly-net with me.

22. *CAPRIMULGUS NUBICUS*, Licht.; Hartert, Cat. B. xvi. p. 560.

Caprimulgus, sp. inc., Yerbury, Ibis, 1886, p. 15; Barnes, Ibis, 1893, p. 69.

The Aden Nightjar is almost to a certainty of this species, still the single specimen obtained by me does not quite tally with either of the two specimens of *C. nubicus* in the British Museum. Capt. Nurse, 13th Bo.N.I., informs me that he found a nest containing two young Nightjars in a wady at Lahej in May 1894. The nest was probably one of this species.

I believe that a second species of Nightjar is to be found in the neighbourhood of Lahej; it is altogether a larger bird, but as the only glimpses of it have been obtained in

the gloaming, when it has been too dark to shoot, its identification must remain a mystery for the present.

23. *MEROPS CYANOPHRYS* (Cab. & Heine); Yerbury, *Ibis*, 1886, p. 15; Barnes, *Ibis*, 1893, p. 70.

Common inland and resident. I never found a nest of this species, though I saw a pair prospecting a hole in a nullah's bank near Lahej. The hole, however, was only about 6 inches deep, and if the birds had intentions of breeding in it, it would have required considerable deepening.

24. *MEROPS PERSICUS*, Pall.; Sharpe, *Cat. B. Brit. Mus.* xvii. p. 66 (1892); Barnes, *Ibis*, 1893, p. 70.

An Aden specimen of the Bee-eater is in the possession of Capt. Nurse, who procured it on the 14th of November 1894. I met with this bird only three times during my recent trip. At Lahej on the 12th of March a large flock was flying across from west to east, making a good deal of noise calling. A single specimen was seen at Shaik Othman on the 4th of March; while the third occasion was in the middle of the Red Sea, on the 21st of April, when a large flock was passing from west to east. This flock came fairly close to the ship, and from their appearance and voices I should say they were undoubtedly of this species.

25. *MEROPS*, sp. inc., Barnes, *Ibis*, 1893, p. 71.

With Barnes, I believe in the existence of a third species of Bee-eater at Aden, but its identity still awaits verification.

26. *CORACIAS GARRULA*, Linn.; Yerbury, *Ibis*, 1886, p. 15; Barnes, *Ibis*, 1893, p. 71.

The European Roller appears to be a regular cold-weather visitant at Aden, though I did not see a single specimen during my recent visit. I can find only two records of its appearance logged in my old note-books, though I must have met with it much more frequently. These occasions were at Huswah in August, 1883, and Gold-Mohur Valley on the 14th of August. A specimen is in Mr. Chevallier's collection.

27. *CORACIAS ABYSSINICA*, Bodd. ; Barnes, *Ibis*, 1893, p. 72.

The only occasion that I met with a Long-tailed Roller was at Haithalhim on the 20th of March 1883.

28. *UPUPA EPOPS*, Linn. ; Yerbury, *Ibis*, 1886, p. 16 ; Barnes, *Ibis*, 1893, p. 73.

The Hoopoe is a regular cold-weather visitant.

29. *HALCYON SEMICERULEA* (Forsk.) ; Barnes, *Ibis*, 1893, p. 72.

I met with this bird twice during my recent visit, the first occasion being at the tanks on the 4th of April, 1895, and the second at Gold-Mohur Valley on the 18th of April. I saw the skin of a third specimen in the possession of Capt. Nurse, but took no note of date of capture.

30. *CUCULUS CANORUS*, Linn. ; Barnes, *Ibis*, 1893, p. 72.

Recorded by Mr. Barnes.

31. *COCCYSTES JACOBINUS* (Bodd.) ; Shelley, *Cat. B. Brit. Mus.* xix. p. 217 (1891).

Coccytes, sp. inc., Yerbury, *Ibis*, 1886, p. 15 ; Barnes, *Ibis*, 1893, p. 73.

I met with a pair of this bird on my way back to Shaik Othman among the baubul-trees beyond the edge of the cultivation of the Lahej oasis. Unfortunately I had knocked off the hammer of the right barrel of my gun just before I saw the birds, so, after a snap-shot at one of them through the trees, I was placed *hors-de-combat*. A specimen procured at Shaik Othman on the 31st of March is in Capt. Nurse's collection.

32. *CENTROPUS SUPERCILIOSUS* (Hempr. & Ehr.) ; Shelley, *Cat. B. Brit. Mus.* xix. p. 363 (1891).

Centropus, sp. inc., Yerbury, *Ibis*, 1886, p. 15 ; Barnes, *Ibis*, 1893, p. 73.

This bird's booming note is often to be heard round Lahej, and, in spite of its skulking habits, it was not unfrequently seen in March. The Arabs of that district call it "Hood-Hood," but Capt. Nurse informs me that "Hūd-Ilūd" is

generally given in Arabic dictionaries as the equivalent of "Hoopoe."

IV. PASSERES.

33. *LANIUS LAHTORA*, Sykes ; Barnes, Ibis, 1893, p. 73.

Lanius, sp. inc., Yerbury, Ibis, 1886, p. 16.

A specimen was obtained on the 31st of March in the baubul forest just outside the limits of the Lahej oasis. It is a common bird inland, and resident. I found a nest near the so-called forest at Shaik Othman in a prickly bush.

34. *LANIUS NUBICUS*, Licht. ; Yerbury, Ibis, 1886, p. 16 ; Barnes, Ibis, 1893, p. 73.

A specimen shot at Lahej in January 1885 has already been recorded. This is probably an uncommon species in the locality.

35. *LANIUS ISABELLINUS*, Ehr. ; Gadow, Cat. B. Brit. Mus. viii. p. 277 (1883).

Probably a resident. Although not uncommon, all the specimens met with were either females or immature males. Capt. Nurse's collection contains specimens from Lahej, procured there in December and March.

36. *LANIUS COLLURIO*, Linn. ; Gadow, Cat. B. Brit. Mus. viii. p. 286 (1883).

I procured an example of this species at Aden in April 1883. This was the specimen referred to in my previous paper (Ibis, 1886, p. 16) as having been sent to Mr. Hume. It is now in the British Museum.

37. *HYPOCOLIUS AMPELINUS*, Bp. ; Sharpe, Cat. B. Brit. Mus. iii. p. 316 (1877) ; Barnes, Ibis, 1893, p. 74.

Recorded by Barnes, but, like several species included in his list, on somewhat insufficient evidence. Still, as the bird is known to leave Fao in the autumn and to occur in the coast regions of Abyssinia, it may well be that it passes by Aden on migration.

38. *MUSCICAPA GRISOLA* (Linn.); Barnes, Ibis, 1893, p. 74.

I have no record of having met with this species in Aden or in its neighbourhood.

39. *TERPSIPHONE CRISTATA* (Linn.); Yerbury, Ibis, 1886, p. 16.

Terpsiphone paradisi, Barnes, Ibis, 1893, p. 74.

A male shot at Lahej in March 1895 had acquired the elongated tail-feathers, and had begun to assume the white plumage of the adult. It is a rare bird in this neighbourhood, though probably more frequent when the country is under irrigation than at any other time.

40. *HIRUNDO RUSTICA*, Linn.; Yerbury, Ibis, 1886, p. 14; Barnes, Ibis, 1893, p. 68.

Not met with during my recent trip, but Capt. Nurse has a specimen killed near Aden on the 25th of October, 1894. It seems to visit Aden only after stormy weather.

41. *PTYONOPROGNE OBSOLETA* (Cab.).

Cotile obsoleta, Yerbury, Ibis, 1886, p. 14; Barnes, Ibis, 1893, p. 69.

This species appears to be much more abundant in Aden now than formerly. In 1884-85 I saw but few nests, situated, as a rule, in the roofs of caves in the rocks. This year, however, several nests were found in the Great and Little Tunnels and in one or two of the houses near the Native Infantry mess. Three is the usual number of eggs in a clutch. The size of the eggs in different clutches varies considerably, so much so as to cause doubt as to the identity of the parent birds. It is quite possible that *P. rupestris* may occur at Aden also.

42. *MONTICOLA CYANUS* (Linn.); Yerbury, Ibis, 1886, p. 16; Barnes, Ibis, 1893, p. 74.

The Rock-Thrush is a regular cold-weather visitant at Aden. I saw several times in the neighbourhood of Lahej a bird that looked like a species of *Thamnobia*, but failed to obtain a specimen.

43. *CERCOTRICHAS MELANOPTERA* (Hempr. & Ehr.); Yerbury, Ibis, 1886, p. 16; Barnes, Ibis, 1893, p. 75.

a. Lahej, March 1895.

A common bird inland. I found a nest of it at Shaik Othman on the 7th of April, 1895. It was placed between three almost vertical leaves of a young date-palm (which caused the nest to assume a peculiar triangular appearance on its outer margin) at about two feet from the ground. The nest contained two eggs of a pale greenish ground-colour, dotted with green-brown. The eggs were taken, as a week at least would have had to elapse before another visit could be paid to the nest. Probably, therefore, the full clutch of eggs was not laid.

44. *ARGYA SQUAMICEPS* (Cretzschm.); Sharpe, Cat. B. Brit. Mus. vii. p. 395 (1883).

Argya, sp. inc., Yerbury, Ibis, 1886, p. 16; Barnes, Ibis, 1893, p. 75.

A common bird inland. Oates's description of the habits of *A. earlii* (Faun. Brit. Ind., Birds, i. p. 106) exactly applies to this species also.

45. *PYCNONOTUS ARSINOE* (Hempr. & Ehr.); Yerbury, Ibis, 1886, p. 17; Barnes, Ibis, 1893, p. 74.

This is a common and permanent resident.

46. *PYCNONOTUS XANTHOPYGIUS* (Hempr. & Ehr.); Barnes, Ibis, 1893, p. 75.

a. Lahej, March 1895.

b. Aden. In the collection of Capt. Nurse.

This is another common permanent resident. A nest was found near the reservoir, in the Isthmus position, containing three hard-set eggs, and one of the parent birds was shot, as above noted. Although I kept a look-out for the large Bulbul previously referred to by Mr. Barnes and myself, I failed to meet with it during my recent visit.

47. *ORIOLOUS GALBULA*, Linn.; Barnes, Ibis, 1893, p. 76.

An occasional cold-weather visitor.

48. *SAXICOLA GENANTHE*, Linn. ; Barnes, Ibis, 1893, p. 76.

This species, recorded by Barnes, was never met with by me, but Capt. Nurse has a female bird shot on the 15th of November, 1894.

49. *SAXICOLA DESERTI*, Temm.

Saxicola stapazina, Barnes, Ibis, 1893, p. 76.

I did not for certain identify any Chats in my former paper, and only suggested that *S. stapazina* might be one of the species found near Aden. I have no doubt that *S. deserti* was the species I intended, and I have seen a male in Capt. Nurse's collection.

50. *SAXICOLA PLESCHANKA* (Lepceh.) ; Barnes, Ibis, 1893, p. 76.

Saxicola morio, Seeb. Cat. B. Brit. Mus. v. p. 372.

Observed by Barnes, but no specimen procured.

51. *SAXICOLA ISABELLINA* (Cretzschm.) ; Seeb. Cat. B. Brit. Mus. v. p. 300.

A specimen of this Chat is in Capt. Nurse's collection. It was shot at Shaik Othman, Oct. 28, 1894.

52. *MYRMECOCICHLA MELANURA*. (Plate I. fig. 2.)

Myrmecocichla melanura (Temm.) ; Yerbury, Ibis, 1886, p. 17 ; Barnes, Ibis, 1893, p. 77.

A common permanent resident. After a long search a nest of this bird, containing three young ones, was found in a deep hole in the vertical face of the Great Tunnel on the camp side. This is the bird most familiar to the Aden residents, taking the place with them of our own Robin, and has, too, a sweet little song. It can be understood, therefore, how loth one is to shoot a specimen.

The corresponding form of Palestine has lately been shown by Dr. Sharpe (Bull. B. O. C. iv. p. xxxviii ; Ibis, 1895, p. 384) to be distinct from the present species of Arabia, Abyssinia, and Somaliland, and named *Myrmecocichla yerburii* (Pl. I. fig. 1).

Both species are figured, for comparison, in the accompanying Plate.



1.

2.

J. G. Krullemans del. et lith.

1. MYRMECOCICHLA MELANURA.
2. " YERBURYI.

Mittem Bros. imp.

53. *RUTICILLA*, sp. inc.

A Redstart is a casual cold-weather visitant, but the exact species awaits identification. It will, however, in all probability, be found to be *R. phoenicurus* or *R. mesoleuca*.

54. *PRINIA*, sp. inc.

A nest of a species of *Prinia* was found at Shaik Othman on February 24th, 1895, containing four brick-red eggs.

55. *CISTICOLA CISTICOLA* (Temm.) ; Sharpe, Cat. B. Brit. Mus. vii. p. 259 (1883).

I brought back a battered specimen of a Fantail Warbler, which Dr. Sharpe identifies as belonging to this species.

56. *PHYLLOSCOPUS*, sp. inc., Barnes, t. c. p. 78.

I also have noticed a Willow Warbler on occasions, but could never manage to secure a specimen.

57. *BURNESIA GRACILIS* (Cretzschm.) ; Sharpe, Cat. B. Brit. Mus. vii. p. 210 (1883).

A common bird round Lahej, wherever the tall rank grass grows. The dimensions of a specimen (shot March 22, 1895) taken in the flesh were :—Length from tip of bill to vent 3·50 inches, tail (root to end of longest feather) 1·55, pinion-joint to tip of second feather 1·95. All the specimens obtained were unfortunately spoilt, either by shot or in skinning. I regret not having made preparations for carbolizing specimens of the smaller birds.

58. *MOTACILLA ALBA*, Linn. ; Yerbury, Ibis, 1886, p. 17 ; Barnes, Ibis, 1893, p. 78.

A common cold-weather visitor.

59. *MOTACILLA FELDEGGI*, Michah. ; Yerbury, Ibis, 1886, p. 17 ; Barnes, Ibis, 1893, p. 79.

I saw a few Yellow Wagtails in the stream near Haithalhim in March 1895, but never had a gun with me when I chanced upon them. There is a specimen in the British Museum shot by Mr. Chevallier in May 1885.

60. *NECTARINIA METALLICA*, Licht. ; Yerbury, Ibis, 1886, p. 15 ; Barnes, Ibis, 1893, p. 73.

Common and generally distributed inland. At Haith-

allim in March it seemed to affect by preference bushes of *Calotropis gigantea*.

61. *DILOPHUS CARUNCULATUS* (Gm.) ; Yerbury, Ibis, 1886, p. 18 ; Barnes, Ibis, 1893, p. 80.

The flock previously recorded by me (Ibis, 1886, p. 18) is the only occasion on which I have met with this species.

62. *CORVUS AFFINIS*, Rüpp.

Rhinocorax affinis, Sharpe, Cat. B. Brit. Mus. iii. p. 46 (1877).

When first I arrived at Lahej in March 1895 there was a large flock of these birds in the neighbourhood. My attention was attracted to them by their curious call and their non-corvine look when on the wing, the latter due, I fancy, to a shortness of tail and great breadth of wing near the body, quite out of proportion to the size, as a Crow. The whole flock disappeared in about a fortnight, as, when I went out some days later to shoot another specimen, not a single bird was to be seen.

63. *CORVUS CORAX*, Linn.

Fairly common inland.

64. *CORVUS UMBRINUS*, Sundev. ; Sharpe, Cat. B. Brit. Mus. iii. p. 17 (1877).

a. Lahej, March 15, 1895.

b. Shaik Othman. In the collection of Capt. Nurse.

These Ravens are very plentiful at Lahej, Shaik Othman, and on the Isthmus, but during my recent trip I never saw them in Aden itself, except near the reservoir at the Isthmus position just inside the walls, and this seems to be the limit of their wanderings. Barnes records *C. culminatus* as the common Aden Crow, but the skins obtained, as above noted, are those of *C. umbrinus*. When I went to Aden in 1869 three Crows were to be frequently seen, and concerning them a story, as narrated by Barnes, existed. They were, however, frequently to be observed at Steamer Point ; I have seen them pretty well all over the peninsula, and they by no means confined themselves to the Isthmus position only. These birds were recorded (provisionally) by Blanford (' Fauna and

Flora of Abyssinia') when he passed through Aden at the time of the Abyssinian Expedition as *C. affinis*, but I think they were all defunct when I returned to Aden in 1882.

Crows breed in the rocks outside the Isthmus position and in the doum palms at Shaik Othman, at which latter place Capt. Nurse told me he took a nest containing four eggs on the 25th March, 1895.

65. *HYPHANTORNIS GALBULA* (Rüpp.) ; Yerbury, Ibis, 1886, p. 18 ; Barnes, Ibis, 1893, p. 80.

A resident, breeding in many places in the crater at Aden. It is very common, too, at Lahej and Shaik Othman.

66. *ESTRElda RUFIBARBA* (Ehrenb.) ; Yerbury, Ibis, 1883, p. 18 ; Barnes, Ibis, 1893, p. 82.

Obtained at Lahej in January 1884.

67. *ÆDEMOsYNE CANTANS* (Gm.) ; Sharpe, Cat. B. Brit. Mus. xiii. p. 371 (1890).

Uroloncha, sp. inc., Barnes, Ibis, 1893, p. 82.

Very common in flocks in the big baubul-trees at Shaik Othman and on the road to Lahej. This is probably the *Uroloncha* of Barnes's list. Capt. Nurse informs me that he found a nest of this bird, containing two pure white eggs, at Shaik Othman on the 25th of March, 1895.

68. *PASSER EUCHLORUS* (Licht.) ; Sharpe, Cat. B. Brit. Mus. xii. p. 341 (1888).

Although not included in Mr. Barnes's list, I knew of the existence of this bird at Lahej, where it is very common, before I left Aden in 1885. One or more big flocks have established themselves now in Aden itself, breeding in the thorny trees at the tanks and alongside of the gaol-wall. They are gregarious and build a thick nest of thorny twigs. The eggs vary somewhat in markings and size. A clutch contains three eggs, and one taken by Capt. Nurse in May 1894 has been handed over to the British Museum.

It would be interesting if some one would devote a little time to working out the changes of plumage of males of this species, as males in all stages are to be seen in the flocks :—
(i.) A bright canary-yellow, with a long, pale fawn-coloured,

almost white tail ; (ii.) like the former, but wanting the long tail ; and (iii.), a form hardly distinguishable from the females. What does this mixing up of forms mean ? I concluded it to indicate that these birds bred all the year round, and the fact that form i. is rare, while form iii. is by far the commonest, may lend some support to this, or it may mean that the males begin to assume the canary-coloured plumage at the end of the first year, but do not assume the long tail till the beginning of the second. As the birds breed gregariously, it would be difficult to identify the actual owners of any particular nest.

69. *PASSER DOMESTICUS* (Linn.) ; Sharpe, Cat. B. Brit. Mus. xii. p. 307 (1888).

Passer, sp. inc., Yerbury, Ibis, 1886, p. 18 ; Barnes, Ibis, 1893, p. 83.

This is another bird that has increased tremendously in Aden of late years, while it absolutely swarms at Lahej and Shaik Othman. Formerly it was rare to see Sparrows anywhere in Aden except occasionally at the tanks ; now they are to be found in many places, and have even established themselves in the Crescent at Steamer Point, where I have both seen and heard them several times in the verandah and on the roof of the " Hôtel d'Europe."

In 1869, an ancient legend ran that somebody had imported some Sparrows and turned them loose at the tanks. These birds, finding Aden not a congenial abode, had migrated forthwith to Lahej. I should be very sorry to say that they were the ancestors of all the Sparrows now to be seen in the neighbourhood, still it was a well-accepted story at that time.

I am still far from satisfied that the House- and Tree-Sparrow do not both exist in Aden, and I know that some others entertain the same idea. It was with the object of proving this or the contrary that I brought skins from two localities (Lahej and Shaik Othman), but I soon saw that, so far as these two specimens were concerned, they were both House-Sparrows.

70. *Pyrrhuloxia melanocephala* (Cab.) ; Yerbury, Ibis, 1886, p. 18 ; Barnes, Ibis, 1893, p. 83.

Very common and a permanent resident in all desert parts of the district.

71. *Galerita cristata* (Linn.) ; Yerbury, Ibis, 1886, p. 18 ; Barnes, Ibis, 1893, p. 83.

A very common species inland.

72. *Alcedo desertorum* (Stanl.) ; Yerbury, Ibis, 1886, p. 18 ; Barnes, Ibis, 1893, p. 83.

Very common in the same localities as the last two species. I think these birds were breeding among the low *salsola* bushes close to the head of the harbour when I visited that place in April 1895. Several times I saw one of these birds (presumably a male) rise in a slanting direction about 30 feet up into the air, singing the while ; it would then drop almost vertically, and when it stopped singing I fancied I heard a faint answering twitter come from the low bushes, as though its mate was answering.

73. *Mirafra*, sp. inc.

Recorded by Barnes, but I do not remember ever having seen a Bush-Lark in Aden.

V. COLUMBÆ.

74. *Columba waalia* (Gm.) ; Salvad. Cat. B. Brit. Mus. xxi. p. 15 (1893).

Treron, sp. inc., Yerbury, Ibis, 1886, p. 18 ; Barnes, Ibis, 1893, p. 165.

a. Lahej, March 17, 1895.

There were generally a pair of these birds feeding on the figs in the Sultan's garden at Lahej. They are said to be more common when the fields are being irrigated.

75. *Columba livia*, Bonn. ; Salvad. Cat. B. Brit. Mus. xxi. p. 252 (1893) ; Barnes, Ibis, 1893, p. 165.

These Pigeons are very abundant, breeding near the tanks and other places.

76. *TURTUR SENEGALENSIS* (Linn.) ; Barnes, Ibis, 1893, p. 165.

Turtur, sp. inc., Yerbury, Ibis, 1886, p. 19.

This Dove is a common resident.

77. *TURTUR RISORIUS* (Linn.) ; Barnes, Ibis, 1893, p. 165.

This is another common resident.

78. *CENA CAPENSIS* (Linn.) ; Yerbury, Ibis, 1886, p. 19 ; Barnes, Ibis, 1893, p. 166.

These birds were in numbers in beautiful plumage during the month of March, 1895, at Lahej. Inland this is a common, generally distributed species.

VI. PTEROCLETES.

79. *PTEROCLES EXUSTUS* (Linn.) ; Yerbury, Ibis, 1886, p. 19 ; Barnes, Ibis, 1893, p. 166.

These birds begin to come in numbers about 7.30 A.M., on return from drinking, to the fields round Al Hautah, and snaring them is a favourite amusement of the small Arab boys, the *modus operandi* being as follows :—Eight or nine hardened balls of clay (about 1 inch in diameter) are fastened together ; each ball is perforated by a horsehair, having a noose at the end of it. A hole is scratched in one of the fields visited by the birds and the balls buried in it, so that the horsehair nooses are free ; each noose is then opened out, laid on the ground, and baited with a few grains.

At Haithalhim, while I was camped there, these birds came in thousands to drink in the stream, particularly at the last pool the water reached. Shooting Sand-Grouse, at the best of times, can hardly be called sport, but to shoot them under these conditions is nothing short of murder, and only justifiable when done in moderation for the pot. Early in April 1895 a big pool of rain-water was formed near Shaik Othman, and the Sand-Grouse came in great numbers to drink there. A hen, taken at hazard from a number shot (April 1, 1895), had an almost fully developed egg in her ovaries.

80. *PTEROCLES LICHTENSTEINI*, Temm. ; Yerbury, Ibis, 1886, p. 19 ; Barnes, Ibis, 1893, p. 166.

I only saw one specimen of this species during my recent visit, and that was among a lot of Grouse shot by Mr. Chevallier near the locality where we met with the large flock in March 1883. I believe this species to be common and resident, or at most only partially migrant ; and the reason of its being so seldom met with is that it is a truly desert form, and never visits the fields for the purpose of feeding, like the former species does, but lives on the seeds of various desert plants, *e. g.* *salsola*, *mimosa*, &c., and spends its time where these plants grow. Where and when it drinks is, I confess, a mystery—it cannot be along with *P. exustus*, as its peculiar note (a sort of whistle, generally twice repeated) would at once betray it. The Arabs of the Lahej district recognize two species, but call both alike “ Uht-Uht,” a name founded presumably on the note of *P. exustus*, and therefore quite inapplicable to this species.

VII. GALLINÆ.

81. *CACCABIS MELANOCEPHALA* (Rüpp.) ; Yerbury, Ibis, 1886, p. 19 ; Barnes, Ibis, 1893, p. 166.

This species, the “ Ukhob ” of the Arabs of the district, is still abundant round Haithalhim, and out towards Zaidah in March 1895 the birds were still in coveys and showed no signs of breeding ; nor did any of the specimens obtained show breeding-symptoms, whereas those shot and seen in March 1883–84 all alike showed them unmistakably. This may have been due to the unusual dryness of the season in 1895, or, I think more probably, to the destruction of the old garden at Haithalhim, with its attendant irrigation-system. This has undoubtedly affected a considerable area, and may have retarded the breeding-season a month or more.

82. *CACCABIS CHUKAR*, Gray ; Barnes, Ibis, 1893, p. 166.

I am still doubtful of the existence of this bird in the neighbourhood of Aden.

83. *AMMOPERDIX BONHAMI* (Fraser); Barnes, Ibis, 1893, p. 166; Ogilvie Grant, Cat. B. Brit. Mus. xxii. p. 123 (1893).

I have never seen a See-see obtained in the neighbourhood of Aden, but the fact of one being found in the hills inland is well established. Barnes has identified the species as *A. bonhami*, but I think it just as likely to be *A. heyi*.

84. *COTURNIX COMMUNIS*, Bonn.; Barnes, Ibis, 1893, p. 167.

Coturnix dactylisonans, Yerbury, Ibis, 1886, p. 20.

Grey Quail visit the neighbourhood of Aden at times in considerable numbers, and are often seen in Aden itself. About Lahej the Arabs snare considerable numbers of Quail of all sorts, which are brought into Aden for sale.

85. *COTURNIX DELEGORGUEI*, Deleg.; Barnes, Ibis, 1893, p. 168; Ogilvie Grant, Cat. B. Brit. Mus. xxii. p. 243 (1893).

Although I appear to have overlooked this species during my former visits to Aden, I found it round Lahej in March 1895 as plentiful as the Grey Quail. I doubt its being a true migrant.

86. *TURNIX LEPURANA* (Smith); Barnes, Ibis, 1893, p. 168; Ogilvie-Grant, Cat. B. Brit. Mus. xxii. p. 539 (1893).

Although I set myself the task of obtaining a specimen of this species, I failed to do so. I flushed the bird frequently, but never chanced to have a gun with me at the time. It always struck me that the birds flushed looked, when on the wing, more like Bush- than Button-Quail, and had I been in India I should have put them down to be *Perdica asiatica*. An idea seems to exist that a Bustard-Quail is to be found round Lahej, but I doubt there being any ground for it.

VIII. ALECTORIDES.

87. *EUPODOTIS ARABS* (Linn.); Yerbury, Ibis, 1886, p. 20; Barnes, Ibis, 1893, p. 168.

The numbers of Bustard (local name "Būlawān") round

Lahej have sadly diminished since 1885. During the month I spent out there in 1895 I only saw the bird twice.

88. *HOUBARA MACQUEENI* (J. E. Gray); Barnes, *Ibis*, 1893, p. 168; Sharpe, *Cat. B. Brit. Mus.* xxiii. p. 318 (1894).

Though I have never seen a specimen from the neighbourhood, still I have no doubt of its existence there. I believe, too, that a small Bustard is to be found in the vicinity of Bir Ahmed and Huswah.

IX. FULICARIÆ.

89. *RALLUS AQUATICUS*, Linn.; Sharpe, *Cat. B. Brit. Mus.* xxiii. p. 20 (1894).

I flushed two Water-Rails in the stream at Haithalhim on the 24th of March. I got the gun and tried to put them up again, but did not succeed, as might have been expected, the reeds being 12 or 14 feet high. They looked exactly like the European Water-Rail.

90. *GALLINULA*, sp. inc.

I saw a Waterhen swimming about in a pool in the river near Haithalhim on the 23rd of March. It looked like the English Moorhen.

91. *CREX PRATENSIS*, Bechst.; Barnes, *Ibis*, 1893, p. 172.
Found by Barnes at Aden.

X. LIMICOLÆ.

92. *Cursorius*, sp. inc.

The exact species of the Courser found at Aden still remains a mystery.

93. *SQUATAROLA HELVETICA* (Linn.); Barnes, *Ibis*, 1893, p. 169.

A cold-season visitor.

94. *CHARADRIUS PLUVIALIS*, Linn.; Yerbury, *Ibis*, 1886, p. 20; Barnes, *Ibis*, 1893, p. 169.

I believe this to be an occasional cold-weather visitor, as,

although I have never shot it myself, I have heard from others (who ought to know what Golden Plovers are like) of their having done so.

95. *ÆDICNEMUS SCOLOPAX* (S. G. Gm.); Yerbury, *Ibis*, 1886, p. 20; Barnes, *Ibis*, 1893, p. 769.

As some doubt exists as to the specific identification of the Aden Thick-knee, I rather exerted myself to get a specimen. It is a common bird and frequently seen near Lahej, but its powers of running are such that it invariably beat us. On one occasion I gave the gun and a couple of cartridges to an Arab, and told him to try and shoot one of a pair we had moved. He crawled and wriggled, in a manner I could not have done, to within twenty yards, fired, and—missed, of course; but this man was the worst shot, I think, I ever met with. The Arabic name for the Thick-knee is “Karrawān.”

96. *ÆGIALITIS MONGOLICA* (Pall.); Barnes, *Ibis*, 1893, p. 169.

Mentioned by Barnes.

97. *ÆGIALITIS CANTIANA* (Lath.); Barnes, *Ibis*, 1893, p. 170.

A specimen procured near Aden on the 6th of January, 1895, is in Capt. Nurse's collection.

98. *STREPSILAS INTERPRES* (Linn.); Yerbury, *Ibis*, 1886, p. 20; Barnes, *Ibis*, 1893, p. 170.

See the former notices.

99. *DROMAS ARDEOLA*, Payk.; Yerbury, *Ibis*, 1886, p. 20; Barnes, *Ibis*, 1893, p. 170.

Not met with during my recent visit to Aden. These birds breed in considerable numbers in May on the island of Sad-ad-din, near Zeila, on the Somali coast.

100. *HÆMATOPUS OSTRALEGUS*, Linn.; Yerbury, *Ibis*, 1886, p. 21; Barnes, *Ibis*, 1893, p. 170.

There seems to be some doubt as to the specific identification of this bird. It was plentiful enough up the

harbour, but quite capable of taking care of itself. I tried to get it on two or three occasions, but without success.

101. *HIMANTOPUS CANDIDUS*, Bonn.

A Stilt is in Mr. Chevallier's collection.

102. *TOTANUS CALIDRIS* (Linn.) ; Yerbury, Ibis, 1886, p. 21 ; Barnes, Ibis, 1893, p. 172.

103. *HELODROMAS OCHROPUS* (Linn.) ; Barnes, Ibis, 1893, p. 172.

Totanus ochropus, Yerbury, Ibis, 1886, p. 21.

Plentiful on the stream near Haithalhim, March 1895.

104. *TRINGOIDES HYPOLEUCUS* (Linn.) ; Barnes, Ibis, 1893, p. 171.

Actitis hypoleuca, Yerbury, Ibis, 1886, p. 21.

105. *TEREKIA CINEREA* (Güld.) ; Yerbury, Ibis, 1886, p. 21 ; Barnes, Ibis, 1893, p. 171.

106. *CALIDRIS ARENARIA* (Linn.) ; Yerbury, Ibis, 1886, p. 21 ; Barnes, Ibis, 1893, p. 171.

107. *TRINGA ALPINA*, Linn. ; Barnes, Ibis, 1893, p. 171.

Tringa cinclus, Yerbury, Ibis, 1886, p. 21.

108. *TRINGA MINUTA*, Leisl. ; Barnes, Ibis, 1893, p. 171.

To our previous notes on the small Waders I have nothing to add.

109. *NUMENIUS ARQUATA* (Linn.) ; Yerbury, Ibis, 1886, p. 21 ; Barnes, Ibis, 1893, p. 171.

110. *NUMENIUS PHÆOPUS* (Linn.) ; Yerbury, Ibis, 1886, p. 21 ; Barnes, Ibis, 1893, p. 171.

111. *GALLINAGO CÆLESTIS*, Frenzel ; Barnes, Ibis, 1893, p. 171.

Gallinago, sp. inc., Yerbury, Ibis, 1886, p. 21.

Personally I have met with but one Snipe in the neighbourhood of Aden, but a few are to be found every year at Lahcj when the fields are flooded. A year or two back the (at the time) Brigade Major at Aden and another gun got

20 couple at Huswah, but this was after an unusually heavy flood. I heard, too, of a Snipe having been picked up in the compound of the N. I. mess in the Crater itself.

XI. GAVIÆ.

112. *LARUS AFFINIS*, Reinh.

Larus, sp. inc., Barnes, Ibis, 1893, p. 175.

This is the undetermined Gull of Barnes's list. It was fairly common at Aden in February and April 1895, and I brought specimens to the British Museum.

113. *LARUS ICHTHYAËTUS*, Pall.; Yerbury, Ibis, 1886, p. 23; Barnes, Ibis, 1893, p. 175.

114. *LARUS BRUNNEICEPHALUS*, Jerd.; Barnes, Ibis, 1893, p. 175.

115. *LARUS RIDIBUNDUS*, Linn.; Barnes, Ibis, 1893, p. 776.

a. Aden, Feb. 19, 1895.

b. Aden, 1895.

116. *LARUS HEMPRICHII*, Bp.; Yerbury, Ibis, 1886, p. 22; Barnes, Ibis, 1893, p. 176.

117. *STERNA ALBIGENA*, Reichenb.; Barnes, Ibis, 1893, p. 176.

118. *STERNA MINUTA*, Linn.; Yerbury, Ibis, 1886, p. 23; Barnes, Ibis, 1893, p. 177.

This species undoubtedly does visit Aden, though the specimen recorded (Ibis, 1886, p. 23) was caught in a butterfly-net when going ashore at Bunder Marriyah, on the Somali coast.

119. *STERNA BERGII*, Licht.; Yerbury, Ibis, 1886, p. 23; Barnes, Ibis, 1893, p. 177.

120. *STERNA MEDIA*, Horsf.; Barnes, Ibis, 1893, p. 178.

121. *STERNA ANÆSTHETA*, Scop.; Barnes, Ibis, 1893, p. 178.

122. *STERNA FULIGINOSA*, Gm.; Barnes, Ibis, 1893, p. 178.

123. STERNA ANGLICA, Mont.

a. Aden, April 9, 1895.

b. Aden, November 18, 1894. In the possession of Capt. Nurse.

It is strange that the only specimen of a Tern procured during my last visit should belong to a species not previously recorded from Aden.

XII. PYGOPODES.

124. PODICIPES NIGRICOLLIS, Brehm ; Barnes, Ibis, 1893, p. 174.

XIII. TUBINARES.

125. PUFFINUS PERSICUS, Hume ; Barnes, Ibis, 1893, p. 175.

I have nothing to add to Barnes's notes on these species.

XIV. HERODIONES.

126. ARDEA CINEREA, Linn. ; Barnes, Ibis, 1893, p. 173.
A cold-season visitor.

127. ARDEA ALBA, Linn. ; Barnes, Ibis, 1893, p. 173.
Noted by Barnes.

128. ARDEA GULARIS, Bosc.

Ardea asha, Sykes ; Barnes, l. c. p. 173.

This Reef-Heron, recorded by Barnes, is not likely to be the Indian species, and will doubtless be found to be *A. gularis* of the Red Sea.

129. ARDEA BUBULCUS, Audouin.

This is probably the "*Ardea*, sp. inc.," of Barnes's list. It was plentiful at Lahej in March 1895, and during the whole of that month some of them were breeding in Al Hautah itself. Capt. Nurse found these birds nesting in the same place during February, and gave me a clutch of three eggs he had taken. These have been handed over to the British Museum.

130. ARDETTA PODICEPS (Bp.).

I believe I saw this bird on the rocks of an island in Ras

Fakoum Bay, April 6, 1895. I had been shooting Bats in the big cave of the island, and, having sent my gun back to the launch, was looking for shells round the shores of the island, when I flushed a Little Bittern; it only flew a few yards, and was flushed again and again in walking round the island. I have frequently seen the same species on the rocks round Aden, and there is nothing else on the Aden list that will at all answer to the bird seen.

131. *CICONIA ABDIMII*, Licht.

♂. Lahej, March 18, 1895. Bill dull horny green, the tip crimson; cheeks bright lead-colour; round the ears, in front of eyes, nostrils, and throat crimson; legs dull olive-green; feet and knees crimson; claws black.

This bird was one of a pair that had just started building in a country almond-tree (*Catappa terminalia*) in the Sultan's garden at Lahej. About a week later five or six pairs were seen similarly employed at Haithalhim.

132. *PLATALEA LEUCORODIA*, Linn.; Yerbury, Ibis, 1886, p. 22; Barnes, Ibis, 1893, p. 174.

A cold-weather visitor.

133. *SCOPUS UMBRETTA*, Gm.

Ibis, sp. inc., Yerbury, Ibis, 1886, p. 22; Barnes, Ibis, 1893, p. 174.

a. Haithalhim, March 25, 1895.

This I believe to be the "*Ibis*, sp. inc." of Barnes's list, and the dark-coloured Ibis stated by me in my former paper as being common at Zaidah, and as breeding in the big tamarind-trees at Haithalhim. This species undoubtedly does breed in these trees, forming great stacks in the forks, each stack seeming to consist of several nests, with entrances at the sides. In one tree, in company with these birds, three pairs of *C. abdimii* were commencing to build.

XV. PHENICOPTERI.

134. *PHENICOPTERUS ROSEUS*, Linn.; Yerbury, Ibis, 1886, p. 22; Barnes, Ibis, 1893, p. 174.

A cold-weather visitor.

XVI. ANSERES.

135. SPATULA CLYPEATA (Linn.).

In a case of Ducks set up by Mr. Chevallier, and shot by himself in the Lahej district, this was the only species I recognized. That several species of Duck are to be found round Lahej at the time of inundation (November) is beyond doubt. The only Duck, however, that I have met with personally is *Querquedula crecca*.

136. ANAS BOSCAS, Linn.; Barnes, Ibis, 1893, p. 174.

137. QUERQUEDULA CRECCA (Linn.); Yerbury, Ibis, 1886, p. 22; Barnes, Ibis, 1893, p. 174.

138. QUERQUEDULA CIRCIA (Linn.); Barnes, Ibis, 1893, p. 174.

XVII. STEGANOPODES.

139. PHALACROCORAX, sp. inc.; Yerbury, Ibis, 1886, p. 24; Barnes, Ibis, 1893, p. 179.

The locality for the Brown Cormorant given by Barnes is no longer available, as a wall has been built across the opening between the Seerah Mole battery and the scarp of Seerah Island, rendering approach to the sea-shore almost impossible. After having paid two or three visits to this locality, one to Marshag, and kept a general look-out for Brown Cormorants without seeing one, I was nearly coming to the conclusion that some mistake had been made, and that all our supposed Brown Cormorants were Boobies. However, on my last visit to Barnes's locality, a few days before leaving, one of these birds came and settled in water about 80 yards off and decided the question; it might have been shot, but could not have been retrieved.

As we were returning from Ras Fakoum Bay on the 6th of April, a Black Cormorant was seen flying in shore along the coast of Little Aden—so that two forms of Cormorants, a black and a brown one, appear to exist at Aden.

140. *SULA FIBER* (Linn.); Barnes, Ibis, 1893, p. 179.

a, b. Little Aden, April 6, 1895.

A number of these birds were seen sitting on a rock off Little Aden on the 6th of April. As it was thought possible that they were breeding, it was decided to take the row-boat and land on the rock. Three birds were shot as the flock flew away, but, though there were plenty of droppings on the rock, there was no sign of breeding. These birds were troubled with a large dipterous parasite (*Ornithomyia*), but I only succeeded in obtaining one specimen of it. The Brown Cormorants previously reported by me as having been seen at Marshag undoubtedly belonged to this species.

On the outward voyage in the Red Sea, when off Jebel Tier and the Apostles on the 5th of February, considerable numbers of these birds were seen. The greater number were in pairs, and were possibly breeding on these barren islets.

141. *PELECANUS ONOCROTALUS*, Linn.; Yerbury, Ibis, 1886, p. 24; Barnes, Ibis, 1893, p. 179.

142. *PHAËTHON INDICUS*, Hume; Yerbury, Ibis, 1886, p. 23; Barnes, Ibis, 1893, p. 179.

I saw two or three of these birds sitting on a detached rock (but little above the wash of the sea) below the ladder at Marshag on the 7th of April, in company with several specimens of *Sula fiber*.

A comparison of this list with that published by the late Lieut. Barnes (*vide* 'Journal Bo. N. H. Society,' vol. viii. pp. 231-233) will show the addition of the following 16 species to the Aden fauna, viz. :—

Circus macrurus, p. 15.
Bubo milesi, p. 16.
Asio accipitrinus, p. 17.
Cypselus affinis, p. 18.
Lanius isabellinus, p. 21.
Saxicola isabellina, p. 24.
Cisticola cisticola, p. 25.
Burnesia gracilis, p. 25.

Corvus affinis, p. 26.
Passer euchlorus, p. 27.
Rallus aquaticus, p. 23.
Gallinula, sp., p. 33.
Himantopus candidus, p. 35.
Sterna anglica, p. 37.
Ciconia abdimii, p. 38.
Spatula clypeata, p. 39.

The following "species incertæ" have been identified, viz.:—

Cypselus melba, p. 17.	Ædemosyne cantans, p. 27.
Caprimulgus nubicus, p. 18.	Passer domesticus, p. 28.
Coccyzus jacobinus, p. 20.	Vinago waalia, p. 29.
Centropus superciliosus, p. 20.	Larus affinis, p. 36.
Lanius collurio, p. 21.	Ardea bubulcus, p. 37.
Argya squamiceps, p. 23.	Scopus umbretta, p. 38.

The present list is, I think, fairly complete, so far as our meagre knowledge of the avifauna of Aden allows. But as the above-given identifications and additions were in great measure made by one not devoting himself especially to ornithology, and in only about ten weeks' collecting, it shows how much still remains to be done. I trust, therefore, that some resident of the place will take the birds in hand and make a really complete list, in lieu of the present one. Eight "species incertæ" still await identification, while a few, included, I fear, on but slight evidence, e. g. *Caccabis chukar*, *Saxicola pleschanka*, *Haliaëtus leucogaster*, and possibly some few others, require verification, and this task I commend to this unknown personage to start on.

III.—On the Birds observed at the Salvage Islands, near Madeira. By W. R. OGILVIE GRANT.

WHILE spending some weeks at Madeira in the spring of 1890 I heard so much about the Salvage Islands, and the enormous number of sea-birds that breed there, that I determined to pay them a visit at the earliest opportunity. It was not, however, till the spring of 1895 that the long-contemplated visit became possible, for these rocky islets—which lie, roughly speaking, about halfway between Madeira and the Canaries—are considered, and justly so, very dangerous to approach, so that steamers passing to and fro give them a wide berth. The only means, therefore, of reaching them are to hire a vessel either at Madeira or the Canaries, which of course entails a very considerable

addition to one's other expenses, and it was only owing to the substantial help offered by Mr. Cecil Baring (who accompanied me on the trip) and his uncle that the wished-for expedition became feasible. It was settled that we should sail on the 4th April last for Madeira, where we had been given to understand a vessel would be waiting to run us down to the Salvages. This arrangement, however, fell through, and after being delayed at Madeira for a week (to our infinite disgust, as time was limited) we took steamer to Gran Canary. Here we at last escaped from the persistently bad weather that had followed us from England, and, after some trouble, managed to hire the 'Pedro,' a small steam-tug of about 25 tons, a small boat and crew of four Spanish fishermen, and a Spanish cook. We have already given a somewhat full account of our trip to the Salvages and the various accidents which befell us on our way*, so I only propose to give here a more complete account of the 21 species of birds found by us on these islands, together with remarks on such habits as we were able to observe during our limited stay of eight days. Our headquarters were on Great Salvage, where we obtained the majority of the specimens collected. During our three weeks' collecting (for the other three were spent at sea) we obtained in all 16 skins of mammals (rabbits and mice), over 200 bird-skins, about 40 skeletons of birds, as well as a number in spirits; many examples of 5 species of reptiles, both alive and in spirits; 173 fishes, including examples of 72 different species; 450 land and freshwater molluscs (several being rare local forms peculiar to these islands), 400 Arthropods, 700 Insects of various kinds, and a few Echinoderms and Worms. A complete collection was made of all the plants met with on Great Salvage and Great Piton, but unfortunately many of these were spoiled by the addition at the last moment of a specially fine ice-plant (*Mesembryanthemum crystallinum*). We did not then know the impossibility of drying this never-sufficiently-to-be-abused plant, and the many sheets of drying-paper round

* See 'The Field,' 21st and 28th September, 1895 (reprinted in 'The Zoologist,' 1895, pp. 401-417).

it were as nothing, for it soaked through the whole lot of plants before reaching England. This was a great disappointment, for Mr. Baring had taken special trouble with this part of the collection, and a good many of the plants, which were *nearly all in flower*, when unpacked were in such a mouldy condition that they could only be thrown away. For this reason I have been unable to identify with certainty the asparagus (*Asparagus scoparius?*), which, together with the wild tomato (*Lycopersicum esculentum*), was by far the largest and most conspicuous plant on Great Salvage. Lastly we brought away specimens of the various rocks and volcanic sands covering parts of the top of Great Salvage, and these are now being examined by Dr. Gregory of the Natural History Museum. We were fortunate in securing the services of Mr. H. Grönvold, an excellent taxidermist employed by the British Museum, and it was largely due to his skill that our collection of skins and skeletons arrived in such fine condition.

4-1. CERCHNEIS TINNUNCULUS.

There were several pairs of Kestrels both at Great Salvage and Great Piton, and we shot one, a female, on the former island as a specimen. It was rather a light-coloured bird, but otherwise quite similar to British examples. We never actually found a nest, nor did we take much trouble to do so, but with the aid of a glass made out the cavity in the face of the volcanic cliff where a pair were evidently breeding. As, however, it would have been impossible to get down to the spot without a rope, we did not attempt to meddle with them. One or two birds were generally to be seen on the wing, hovering over the ice-plant and asparagus bushes, amongst which dwelt colonies of mice and many rabbits. The mouse is, according to Mr. Oldfield Thomas, the same species as that found in North Africa and allied to our house-mouse, but easily distinguished by its larger size, browner back, and white underparts.

2. FALCO SUBBUTEO.

One morning, on reaching the summit of some rocks, we

suddenly found ourselves face to face with a Hobby, and, though no attempt was made on its life, we were able to identify it beyond doubt.

—3. *ASIO ACCIPITRINUS*.

We saw three pairs of Short-eared Owls during our stay on Great Salvage, and shot one female to identify the species. One or two were generally to be seen on the wing towards the afternoon, working quietly up and down over the top of the island with quick spasmodic wing-beats, and uttering their short harsh note at intervals. On the first afternoon spent there we had gone up with Miguel, our Spanish cook, to get a few rabbits for the camp, and see what was to be seen. It chanced that an inquisitive Kestrel and a Short-eared Owl came to find out what we were after and were promptly "collected." Miguel gravely informed us that they were respectively *señor y señora* of the same species! The Owls as well as the Kestrels no doubt levied a heavy toll on the mice, and it pleased us to think that at least some check was being put on these ruthless destroyers of the White-breasted Petrels (*Pelagodroma marina*) and their eggs, of which more anon.

4. *ANTHUS BERTHELOTI*.

One of the most numerous, as well as the tamest, of the small birds on Great Salvage was Berthelot's Pipit, which is also common at Madeira, the Desertas, Porto Santo, and the Canaries. These little birds were our constant companions, and one or two of them were almost always to be seen running about among the stones and ice-plants, generally within a few yards of one's feet. When we arrived at Great Salvage on the 23rd of April, they had not begun to breed, and were generally met with in small companies of three or more, but on the last days of our visit we noted that many had evidently paired, and on the 29th one or two birds were seen going about with nesting-materials in their bills, so the breeding-season must have been just commencing. They apparently rear a second brood in the autumn, for several of the birds we shot were in the freshly-

moulted plumage of the immature bird, with the feathers of the back, wings, and tail widely edged with buff, while in the old birds these parts were in a much-worn condition. Berthelot's Pipit is a wonderfully graceful and active little bird and closely resembles the Grey Wagtail in its movements, as well as the mode in which it captures its insect-prey. Its only note, so far as we heard, is a sharp, prolonged chirp, much like that of the Meadow Pipit, and the bird was never seen to mount into the air and give vent to a prolonged song like its allies.

+5. *HIRUNDO RUSTICA*.

Swallows arrived in great numbers during our stay, many, no doubt attracted by the light, entering our men's stone hut after dark. One evening a regular flight of these birds invaded their sleeping-quarters, and while clinging to the rocky walls like a swarm of bees dozens were caught alive and brought down to our camp in triumph. The Spanish fisherman's shirt is always used as a "poaching pocket," and it is marvellous the number of Petrels one man can manage to stow away round his body. With the exception of a few specially fine birds kept as specimens, the majority of the Swallows were promptly liberated.

6. *CHELIDON URBICA*.

+7. *COTILE RIPARIA*.

Both House- and Sand-Martins were seen daily, and we procured a few specimens of each. Twice during the early morning I saw flights of the latter pass quite low over the top of Great Salvage, travelling in a northerly direction.

8. *CYPSELUS MURINUS*.

9. *CYPSELUS UNICOLOR*.

According to Mr. Hartert the former of these is a subspecies of the Common Swift (*C. apus*), and our specimens bear out the distinguishing characters he mentions, being much paler and having the white colour on the throat more extended. But we cannot see that there is any difference in size, for the wing in specimens from Teneriffe and Great Salvage measures 6.6 inches, which is the average measure-

ment in *C. apus*. This Swift was pretty numerous and constantly seen wheeling backwards and forwards amongst the rocks near the top of the island, in company with the second species (*C. unicolor*), which was, however, comparatively scarce, and easily distinguished on the wing by its much smaller size and darker colour.

10. CAPRIMULGUS EUROPÆUS.

On our second visit to the Great Piton a Goatsucker rose from among some sandy ground, and was shot by our taxidermist, Mr. Grönvold. It proves an interesting bird, and belongs to the small race of *C. europæus*, which ranges as far south as Damaraland in winter, and is also met with in Spain and Algeria (see Koenig, J. f. O. 1895, pp. 176-178). Mr. Hartert has kindly gone into the matter with me, and we find that our bird is scarcely separable from *C. unwini*, being of the same dimensions, and only differing in the somewhat darker tone of the upper parts. As regards colour, it is perfectly similar to the typical *C. europæus* from Europe and the British Isles; but it is much smaller. Though we have provisionally included it under this heading, it is quite possible that Mr. Hartert, who is at present engaged on a careful revision of the Goatsuckers, may find sufficient reasons for regarding it either as a distinct subspecies, or a darker western form of the subspecies *C. unwini*.

The following measurements will show how it differs from typical *C. europæus* in size:—

	Wing. in.	Tail. in.
Typical <i>C. europæus</i>	7·6-7·9	5·5-5·7
Small { ♂ ad. Damaraland	7·15	4·7 (moulting).
{ ♂ ad. Great Piton	7·15	5·1
race. { ♂ ad. Spain	7·25	5·5
{ ♂ ♀ ad. Algeria (<i>ex Koenig</i>)	6·9-7·3	4·7-5·5

11. TURTUR COMMUNIS.

We procured a Common Turtle Dove on the Great Piton, and saw a pair on Great Salvage; startled by a shot they dashed from a hole in the face of the cliffs, and disappeared over the top, far out of shot.

+12. STREPSILAS INTERPRES.

+13. NUMENIUS PHÆOPUS.

14. ÆGIALITIS CURONICA (Gm.).

The Turnstone, Whimbrel, and Little Ringed Plover were met with in small flocks on the Great Piton, but not seen on Great Salvage, the barren rocky shores being, perhaps, too unattractive.

15. STERNA FLUVIATILIS.

A good many pairs of the Common Tern were seen at both islands, but we could find no traces of their nesting, though the sandy shores of Great Piton were well suited for it. Perhaps it was too early.

16. LARUS CACHINNANS.

About a dozen pairs of the Yellow-footed Herring Gull had nests about the rocky points on the top of Great Salvage, but we only found one with eggs, and these on the point of hatching; the other nests were either empty or contained downy young. These had their enemies of some sort, for a nest which contained three young the day we found it had only one remaining a few days later. This may have been the work of other Gulls, but we could not help suspecting the Great Hook-billed Pardelas (*Puffinus kuhli*) of being the culprits, for hundreds of them used to come out of their holes in the rocks, or leave their stone houses on the top of the island just before sunset, and fly rather low all over the stony plateau, making the beautiful evening hideous with their incessant cries of "ĩā-gow-a-gow-a-gow"; they certainly appeared to be in search of food of some sort, but we had no means of proving that our suspicions were correct.

+17. PUFFINUS KUHLI.

Our arrival on Great Salvage apparently caused great excitement among the bird-inhabitants, our tent being a special object of wonder, the Pardelas, or Mediterranean Shearwaters, being especially bold and noisy in their greeting. The high volcanic rocks surrounding the south bay are full of miniature caves, in most of which a pair of the Pardelas had their home, and towards sunset the whole population

turned out wheeling and screaming round our encampment, and offering the most tempting rocketing shots as they swept over the high rocks above us.

The male, in a harsh guttural voice, cries "ĩã-gow-a-gow-a-gow," and the female chimes in "ĩã-ĩã-ĩã," and it may be imagined that with thousands of these miscreants circling close round our tent during the entire night, tired as we were, sleep was almost impossible on the first evening of our stay. During the whole of our visit we used every night to be mobbed by these noisy birds. The "march-past," as we called it, generally commenced about six, and continued with unabated zest till we turned in about 10.30 and heard no more. In spite of the tempting shots they offered, we killed very few of these birds, only such as we required for specimens; but our men were not so sparing, for they used every day to catch numbers for food (they skinned and boiled them!), and took back sackfuls to Las Palmas, where, when salted, they are much esteemed by the Spanish fishermen.

The Pardela breeds late, and though during the daytime we found most of the birds in pairs in their rocky nesting-chambers, we never procured a single egg. Enormous numbers of the young are collected by the Portuguese fishermen every autumn, being valued for their oil and downy feathers; the oil is of poor quality, and, as we were informed, is chiefly used for dressing coal-sacks. The happy couples greatly resent being disturbed in their nesting-cavities, and unless extracted without hesitation retaliate by biting with great vigour; their curved bills, with their sharp, cutting edges, being apt to leave an ugly wound on those unskilled in the mode of handling them.

Though the majority pass the day in the holes in the rocks, many also rest at sea, and may be seen in flocks floating quietly on the surface at most hours of the day. On our return journey the 'Pedro' ran right over one of these Shearwaters sleeping peacefully with its head under its wing, but beyond a rough awakening it flew off apparently none the worse. On several occasions, when sitting in our

camp by lantern-light, skinning the birds collected during the day, we were startled by one of these great Shearwaters dashing into our midst like some great white moth dazzled by the light; fortunately none of them ever struck us, or we might have had the worst of the encounter. These birds are evidently the Cormorants alluded to by Mr. Knight in his '*Cruise of the 'Alerte,'* p. 85. He writes:—"The Cormorants dwelt with their families in fine stone houses which they had constructed with great ingenuity. Some of the stones were large and heavy; it would be interesting to observe how the birds set to work to move them, and how they put the roof on. I have been told that they rake up a mound of stones with their powerful wings in such a way that by removing some of those underneath they leave the roof above them." This is of course obviously impossible, some of the stones being a great weight; the fact is that these little stone huts are put up all over the top of the island by the Portuguese fishermen for the birds to nest in, so that the young may be the more easily obtained when they visit the place in autumn. This is commonly done also in the Canaries.

When pulled out of their stone houses during the daytime these birds present a very ludicrous spectacle as they stalk slowly off with a bewildered air, not unmixed with reproach. After a time they get on the wing and make off, their eyes having, I suppose, got accustomed to the light; but if taken from their nesting-chambers and thrown up into the air they drop to the ground like stones, without making any attempt to save themselves with their wings. Bulwer's Petrel acts in exactly the same way.

It has already been remarked that we were inclined to suspect the Pardelas of stealing the young of the Yellow-footed Herring Gull, but it must be admitted that there was no direct evidence against them, beyond the fact that they quartered the ground every evening, apparently in search of food, in the immediate neighbourhood of the Gulls' nests, and were armed with strong hooked bills, which looked capable of making short work of downy young, and caused

their owners to be regarded as suspicious characters. The plumage in both sexes is of course alike; but the male is decidedly the bigger of the two, and when alive may be easily distinguished by his larger head and thicker neck, though these differences disappear when the bird is skinned. On the wing, too, he looks distinctly larger.

+18. *PUFFINUS ASSIMILIS*.

Gould's Little Shearwater, so far as we ascertained, was the only other bird of this genus that visits Great Salvage. At Porto Santo we had already found it breeding plentifully on the Lime Island, and satisfied ourselves that it is this species—and not *P. obscurus*—that occurs there. The young birds do not show the white inner webs to the quills clearly, and hence Mr. Salvin and I were both led to believe that the specimens brought back in 1890 (see 'Ibis,' 1891, p. 469) were the young of *P. obscurus*. I recently examined more than a dozen of old birds in Padre Schmitz's collection at Madeira, which had been obtained at Porto Santo, and these were, without exception, typical *P. assimilis*. At Great Salvage we procured downy young in various stages, and one late egg, almost fresh; this is large for the size of the bird, and the shell is pure white and perfectly oval in shape, the two poles being equally rounded. We never saw much of these birds. During the daytime there were generally some to be seen at sea, often in company with the Mediterranean Shearwater, and one night an old female flew into our camp attracted by the powerful lantern. Every night our men used to sally forth in pairs, to search for this and other species of Petrels, in their nesting-cavities on the sides of the cliffs—bad enough walking, even in daylight, but no harm came of it. One man carried the lamp (a tin coffee-pot it looked like, filled with kerosene oil, and with a coarse cotton wick protruding from the spout), which gave out a brilliant light, while his companion searched the numerous miniature caves and crevices till he had filled his own and the lamp-bearer's shirts with birds of various kinds. In this way we got several nice adults of this species, which

were never to be found with their young during the day. The note of these birds we never ascertained, and when seen on the wing they were always perfectly silent so far as we noticed.

The egg measures 1.9 by 1.35 inch.

—19. PELAGODROMA MARINA.

The White-breasted or Frigate Petrel, as Latham called it, was certainly one of the most interesting species met with during our stay on Great Salvage. It is a lovely bird, with all the underparts as well as the forehead and wide eyebrow stripes snow-white, while the upper parts are dark sooty brown. The legs are very long, and together with the feet deep black, only the middles of the webs being yellow. This species was previously known to inhabit the Australian seas, and its eggs were procured many years ago by Gould's collector, Gilbert, on some small islands off the south-west coast of Australia, in the month of December. One or two specimens are generally obtained every year off the Canary Islands, and one was picked up dead on Walney Island, after a severe gale, in November 1890; but this was of course merely an accidental straggler.

We first observed and recognized with pleasure these beautiful Petrels as we neared the Salvages, when numbers were seen flitting along close to the surface of the sea, with their long legs dangling beneath them and just touching the water. Now they would be lost sight of in the hollows between the huge Atlantic rollers, now reappear, closely following the undulating waters with their graceful easy flight. On the afternoon of our arrival on Great Salvage we found an egg of this bird in what we at first mistook for a rabbit-burrow, but it was unfortunately broken by one of the men. This, however, opened our eyes, and we subsequently found that large colonies of the White-breasted Petrel were breeding on the flat top of the island, in burrows dug out in the sandy ground, and partly concealed by the close-growing ice-plant. It was very unpleasant walking over these breeding-grounds, which occupied considerable areas, for

the ground was honeycombed with burrows in every direction, and gave way at each step, one's boots rapidly becoming full of sand. By thrusting one's arm into one hole after another, we soon procured a fine series of specimens, accompanied in most cases by an egg, for we had evidently hit off the breeding-season, and most of the birds, having laid their single egg, were beginning to sit. Most of the eggs were white, more or less finely spotted, and often zoned towards the larger end, with dark red and purplish dots, but some few were equally spotted all over the shell, while one was almost entirely devoid of markings. In shape they vary considerably, some being perfect ovals equally round at both ends, while others are slightly pointed at the one end (*cf.* Forbes, *Ibis*, 1893, p. 542). Both sexes take part in incubation, for out of twelve birds captured on the egg three were males. While thus engaged we found quite a number of dead birds and sucked eggs, evidently the work of the mice already mentioned, as their droppings were to be seen all about the burrows, and the marks of their teeth upon the empty shells were unmistakable. The birds, some of which were quite freshly killed and almost untouched, were invariably done to death by being bitten at the nape of the neck, and in some cases part of the brain had been eaten. It seemed curious that these comparatively small mice should be able to kill a bird several times larger than themselves, and provided with a fairly strong, hooked bill; but no doubt the Petrels get caught in the end of their burrow, and, being terrified, do not even try to defend themselves. We obtained no young of this species, and the most advanced eggs were but half incubated on April 27th. We never heard the call of this bird; those flying over the sea during the daytime were always perfectly silent so far as we heard, though they constantly passed close to our tug, and there was no lack of them. When caught on their eggs they uttered a short, grunting note, much like that given vent to by the domestic Pigeon under similar circumstances. Our Lanzarote pilot informed us that numbers of these birds breed on the Little

Piton, where there are neither rats nor mice to interfere with them.

The following measurements are taken from a number of adults of both sexes, and we find that the males on the average are distinctly smaller than the females, though this is not apparent from the condensed measurements given below. The average male wing is 6·25, that of the female 6·38.

	Wing. in.	Tail. in.	Tarsus. in.
Five males	5·8-6·6	2·85-3·1	1·67-1·75
Thirteen females	5·8-6·6	3·1 -3·2	1·75-1·8

A large series of eggs measures 1·35-1·48 by 1·0-1·08 inch.

+20. OCEANODROMA CRYPTOLEUCURA.

Cymochorea cryptoleucura, Ridgw. Proc. U. S. Nat. Mus. iv. p. 337 (1882).

Almost more interesting than the white-breasted species was the square-tailed, white-rumped Petrel, of which we obtained but a single example, caught at night by our men on Great Salvage, though we saw several flying over the neighbouring seas from the deck of our steam-tug. This bird had not yet come to shore to breed, and the only egg we obtained was taken on the Lime Island, Porto Santo, in the month of June. It had always been previously supposed that the only small white-rumped Petrel with black webs to the feet met with in these seas was Leach's fork-tailed Petrel (*O. leucorrhoa*). That this bird also occurs there is certain, for we have seen a specimen obtained at the Canaries by Mr. Meade-Waldo, but it would appear to be merely a straggler so far south, and certainly the square-tailed species is the bird that has generally been mistaken for it. *O. cryptoleucura* was described a few years ago from the Sandwich Islands, and no one had any idea that it was also found in the Canary Seas, so that this discovery is a matter of considerable interest to ornithologists. The birds obtained at St. Helena also belong to this form, and not to Leach's Petrel, as has been generally believed. It may be useful to state the main differences between the two.

O. leucorrhoea has the tail *deeply forked*, the outer feathers being much longer than the middle pair and dark to the base, while the upper tail-coverts are uniform white, *not* tipped with black.

O. cryptoleucura has the tail *nearly square*, the outer feathers being only slightly longer than the middle pair, the basal part of the outer feathers is white, and the upper tail-coverts are white, *tipped with black*.

According to our Lanzarote pilot, this species breeds commonly on the Little Piton, and it was with great regret that we had to leave the Salvages without visiting this little island. In propitious weather it is just possible to effect a landing on its dangerous rocks, and it was only the fear of missing our steamer at Las Palmas that prevented our making the attempt, for on our second visit to the Great Piton our pilot told us the sea and wind were fairly favourable.

Since our return to England we have obtained, through Padre Ernesto Schmitz, several additional examples of this species from Madeira, the Lime Island, Porto Santo, and the Desertas Islands, and of these I add the following measurements:—

Four males. Wing 5·6–5·95 inches, tail 2·8–2·9, tarsus 0·81–0·9.

Three females. Wing 5·85–6·2 inches, tail 2·8–2·9, tarsus 0·85–0·95.

The male is distinctly rather a smaller bird than the female; the average male wing is 5·8, that of the female 5·98 inches.

The only egg we obtained measures 1·3 by 0·96 inch. It is exactly like the egg of Leach's Petrel, white, with an indistinct zone of light red, and faint purplish underlying dots round the larger end.

+21. BULWERIA BULWERI.

The brownish-black Bulwer's Petrel was the only other species met with on Great Salvage. It is a common bird in the Madeira and Canary Seas. We were too early for its eggs, but obtained four taken at the Lime Island, Porto Santo,

and Desertas, in the month of June. Our men used to catch numbers of this Petrel every night, and it was nothing for Manuel or Francisco to produce half-a-dozen each out of their shirts; but, with the exception of a few which we kept as specimens, the majority were allowed to escape. The call of this bird is very fine, and was frequently heard at night, a pleasant contrast to the harsh voices of the Great Shearwaters; it consists of four higher notes, and a lower, more prolonged note; the whole repeated several (usually three) times, and uttered in a loud, cheerful strain, which may be correctly expressed as follows:—



The eggs are pure white, almost pyriform in shape, and distinctly pointed towards the smaller end. Four shells measure 1·59–1·81 inch by 1·12–1·28.

IV.—On the Species of the Genus *Turdinulus*.

By W. R. OGILVIE GRANT.

IN the October number of 'The Ibis' 1895 (p. 432) I described a new species of Babbler (*Turdinulus guttaticollis*), from the Miri Hills. A more careful examination of the little group of Timeliæ to which this species belongs shows that the Miri bird is much more closely allied to the true Robert's Babbler (*Pnoëpyga* [*Turdinulus*] *roberti*, Godwin-Austen & Walden) than I at first supposed; and that the birds from Mount Mooleyit, Tenasserim, which have been named *T. roberti* by both Col. Godwin-Austen and Mr. A. O. Hume, and with which I compared my new species, belong in reality to a perfectly distinct species, having the throat and fore neck entirely devoid of the black spots which are equally characteristic of the true *T. roberti* and *T. guttaticollis*.

In 1877 Limborg and W. Davison visited Mount Mooleyit and secured a number of specimens of *Turdinulus*.

The birds collected by Limborg were examined by Col. Godwin-Austen, and identified as "*Pnoëpyga roberti*," Godw.-Aust. & Wald., although the throat and fore neck were entirely devoid of black spots. It must be added, however, that Col. Godwin-Austen's collection having at that time been sent to England, he was unable to compare the Mooleyit specimens with the types from the Manipur Hills.

Mr. A. O. Hume, no doubt accepting this erroneous identification, named all his Tenasserim examples of this little Babbler *Turdinulus roberti*, and under this misnomer they were placed in the National collection. So the mistake began, and, one error having led to another, the genus *Turdinulus* has at the present time got into a state of considerable confusion. But by commencing at its original source I hope to be able to clear up the tangle.

In the first place there can be no doubt that Mr. Büttikofer is quite justified in uniting the genera *Corythocichla*, Sharpe, and *Turdinulus*, Hume (Notes Leyd. Mus. xvii. p. 73). In *Turdinulus*, which was founded on *Pnoëpyga roberti*, the tail is said to be so short that it is hidden by the plumes of the rump. It is perfectly true that in *one* of the typical examples this is the case, but this peculiarity is entirely due to the "make-up of the skin," for in the second typical specimen as well as in other examples the tail extends at least 0·4 of an inch beyond the plumes of the rump, as in Dr. Sharpe's *Corythocichla*.

In 'The Ibis,' 1865, p. 47, Blyth described *Myiothera murina*, a species said by the author to be founded on a specimen in the Leyden Museum bearing the above MS. name of S. Müller. It has already been shown by Dr. Sharpe (Notes Leyd. Mus. 1884, p. 174) that the only *Myiothera murina*, S. Müll., in the Leyden Museum is no *Turdinulus*, but the *Crateroscelis murina* of his volume (Cat. B. vii. p. 590); and it is quite evident that Blyth's notes must have been written from memory—hence his mistake. He wrote as follows:—

"*M. murina*, S. Müll., n. s. Also a true *Turdinus* and

the smallest of the genus. Plumage as in its congeners, with long white supercilia and white spots tipping the wing-coverts. Length $4\frac{1}{2}$ inches; wing 2 in.; tail 1 in.; bill to gape $\frac{3}{4}$ in. Sumatra."

It is clear that this description, brief as it is, cannot apply to the *Myiothera murina*, S. Müll. (= *Crateroscelis murina*), which is a native of New Guinea and some of the adjacent islands, not of Sumatra; and Dr. Sharpe [Notes Leyd. Mus. vi. p. 172 (1884)] is no doubt correct in regarding the *M. murina*, Blyth (nec S. Müller), as identical with *M. (Turdinulus) epilepidota*, Temm. Pl. Col. ii. pl. 107 [no. 448] fig. 2 (1827).

Dr. Sharpe (Cat. B. vii. p. 593), following Mr. A. O. Hume [Str. F. ix. p. 115 (1880)], wrongly identified *M. murina*, Blyth, with *Pnoëpyga roberti*, Godw.-Aust. & Wald., the latter name becoming of course a synonym of his *Turdinulus murinus*, the description of which was taken from Col. Godwin-Austen's type of *P. roberti*, for in 1883 the British Museum did not possess an example of this little Babbler.

Then followed the mistake of identifying the Mooleyt birds as *T. roberti* which I have already alluded to.

Mr. E. W. Oates was the next to fall into this trap, and his description of *T. roberti* (Fauna Brit. Ind., Birds, i. p. 176) is taken from the Tenasserim specimens, which belong to a species totally distinct from the Manipur bird.

Subsequently I compared my *T. guttaticollis* from the Miri Hills with what I believed to be the true *T. roberti* (from Tenasserim); but later on, in going through Col. Godwin-Austen's collections, I came on his types of that species and saw, to my consternation, that what I had thought such a distinct new bird was really very closely allied to Robert's Babbler.

That the two species prove to be distinct is due to accident; the Miri bird is darker and altogether browner, and lacks the rufous on the sides of the breast and flanks. It will thus be seen that the Tenasserim birds are not *T. roberti* and must have a name. But Dr. Sharpe's *Turdinulus exsul*, from the highlands of Borneo, is so ex-

tremely closely allied that I prefer to include the Tenasserim birds under that name.

In describing *T. exsul* from Kina Balu (Ibis, 1888, p. 479), Dr. Sharpe compares it with *T. roberti*, but he of course refers to Mooleyit examples in the Hume and Tweeddale collections. The only difference between them is that the Bornean examples have the ear-coverts devoid of a slight rufescent tinge characteristic of most specimens from Tenasserim and the Malay Peninsula, but not of all, for one example from Klang is in this respect similar to specimens from Borneo.

The species of *Turdinulus* should therefore now stand as follows :—

Key to the Species.

- A. Feathers of the middle of the throat white or grey, each with a median greyish-black streak.
 - a. Tips of the wing-feathers white.
 - a'. Sides of the breast and flanks chestnut *T. brevicaudatus.*
 - b'. Sides of the breast and flanks reddish olive-brown *T. leucostictus.*
 - b. Tips of the wing-feathers buff. Sides of the breast and flanks reddish brown *T. striatus.*
- B. Feathers of the middle of the throat white or whitish buff, with a triangular black spot at the end of each. Tips of wing-feathers white.
 - c. General colour of plumage brown, washed with rufous, especially on the sides of the breast and flanks *T. roberti.*
 - d. General colour of the plumage darker brown, sides of the breast and flanks dark olive-brown *T. guttaticollis.*
- C. Feathers of the middle of the throat uniform, devoid of black streaks or spots.
 - e. Sides of the breast brown, with buff shaft-stripes; superciliary stripes buff or whitish buff *T. exsul.*
 - f. Underparts reddish brown, with wide white shaft-stripes; superciliary stripes white and clearly defined; feathers on the sides of the throat white, strongly tipped with black *T. epilepidotus.*

1. *TURDINULUS BREVICAUDATUS* (Blyth); Büttikofer, Notes Leyd. Mus. xvii. p. 75 (1895).

Specimens in Brit. Mus. from:—

Mount Mooleyit, 5000 ft. W. Limborg. Tweeddale Coll.

Mount Mooleyit, 5000-ft. W. Davison. Hume Coll.

Thoungyah. J. Darling. Hume Coll.

Mount Byingyi, 5500 ft., Shan States. E. W. Oates, Esq. [P.].

2. *TURDINULUS LEUCOSTICTUS* (Sharpe); Büttikofer, op. cit. p. 75 (1895).

Specimens in Brit. Mus. from:—

Perak, Malay Peninsula. L. Wray, Esq. [P.]. *Types of the species.*

3. *TURDINULUS STRIATUS* (Walden); Büttikofer, op. cit. p. 75 (1895).

Turdinus williamsoni, Godwin-Austen, J. As. Soc. Beng. xlv. pt. ii. p. 44 (1877).

Specimens in Brit. Mus. from:—

Khasi Hills.	Tweeddale Coll.	<i>Type of the species.</i>
Garo Hills.		
Tenga Pani, near Sadiya.	} Godwin-Austen Coll.	<i>Type of Turdinus williamsoni, Godw.-Aust.</i>
Noa Dihing, " "		
Chakha, Manipur Hills.		
Konchungbuna, Manipur Hills.		

4. *TURDINULUS ROBERTI* (Godwin-Austen & Walden).

Pnoëpyga roberti, Godwin-Austen & Walden, Ibis, 1875, p. 252; Godwin-Austen, J. As. Soc. Beng. xlv. pt. ii. p. 195 (1876); Hume, Str. F. iv. p. 218 (1876).

Turdinulus murinus, Oates, Birds Brit. Burmah, i. p. 62 (1883) [part; description of type only].

Specimens in Brit. Mus. from:—

Chakha, Manipur Hills.	} Godwin-Austen Coll.	<i>Types of the species.</i>
Asalu, Manipur Hills.		
Eastern Naga.		
Noa Dihing, near Sadiya.		
Manbúm, near Sadiya.		

Subsp. *a.* *TURDINULUS GUTTATICOLLIS*, Grant, Ibis, 1895, p. 432.

Specimens in Brit. Mus. from:—

Miri Hills.	} Godwin-Austen Coll.	<i>Type of the species.</i>
Mishmi Hills.		

5. *TURDINULUS EXSUL*, Sharpe; Büttikofer, Notes Leyd. Mus. xvii. p. 76 (1895).

Turdinulus roberti, Hume & Davison (nec Godw.-Aust. & Wald.), Str. F. vi. p. 234 (1878); Sharpe, Notes Leyd. vi. p. 173 (1884); Oates, Faun. Brit. Ind., Birds, i. p. 176 (1889).

Turdinulus murinus, Hume (nec Blyth), Str. F. ix. p. 115 (1880); Oates, Birds Brit. Burmah, i. p. 62 (1883) [except description of type].

Specimens in Brit. Mus. from:—

Thoungyah.	J. Darling.	{ Hume Coll.	{	Cheeks and sides of the throat washed with rust-colour: underparts less clearly suffused with tawny buff.
Mt. Mooleyit.	W. Davison.			
Mt. Mooleyit.	W. Limborg.			
Klang, Selangore.		W. Davison.	Hume Coll.	{ Cheeks and sides of the throat with scarcely a trace of rust-colour (as in Bornean examples); underparts mostly whitish, partially suffused and edged with pale buff and reddish brown.
Kina Balu.	A. H. Everett, Esq.	[C.]	{	Cheeks and sides of the throat mostly white, with only a slight trace of rust-colour; underparts rather more richly suffused with tawny buff.
Mt. Dulit.	C. Hose, Esq.	[C.]		
Mt. Penrisen.	C. Hose, Esq.	[C.]		

By some ornithologists the Tenasserim birds may be considered worthy of specific distinction, but the differences between them and the Bornean specimens are so slight that I prefer to include them under the heading of *T. exsul*.

With regard to the specimen from Klang, I think it quite possible that it may represent a distinct species, but without more material I cannot give a decided opinion. Mr. E. W. Oates was evidently also at one time inclined to consider the Klang specimen distinct, for it bears a MS. name in his handwriting, which, however, he never published.

6. *TURDINULUS EPILEPIDOTUS* (Temm.), Sharpe, Notes Leyd. Mus. vi. p. 172 (1884); Büttikofer, Notes Leyd. Mus. xvii. p. 75 (1895).

Myiothera murina, Blyth (nec S. Müll.), Ibis, 1865, p. 47.

Specimen in Brit. Mus. from:—

Mount Jedeh, Java. Dr. Vorderman.

This specimen agrees exactly with Dr. Sharpe's description of the type from Sumatra in the Leyden Museum, and this species apparently inhabits both islands.

V.—On a new Species of Tit-Babbler from the Naga and Manipur Hills. By W. R. OGILVIE GRANT.

WHILE continuing the incorporation of Col. Godwin-Austen's Collection recently acquired by the Trustees of the British Museum, I found five examples of a new species of Tit-Babbler, as Mr. E. W. Oates calls the birds of the genus *Proparus*, which had been wrongly identified with *Proparus vinipectus* (Hodgs.). From this species, however, the Naga and Manipur birds are easily distinguished, having the crown and back of the head somewhat more rufescent, the bands bordering the sides of the occiput and nape *dark chocolate* instead of black, and the white on the underparts *restricted to the throat*, the fore neck and chest being uniform vinous-buff instead of white. I have called this very distinct species after Col. Godwin-Austen, by whom the type specimen was obtained in the Naga Hills. The following is a full description:—

PROPARUS AUSTENI.

Proparus austeni, Grant, Bull. B. O. C. 1895, no. xxix. p. iii.

Adult (type). Crown and occiput pale chocolate-brown *washed with rufous*, the latter margined along the sides by bands of *deep chocolate*, beneath which run the white eye-brow stripes, which commence above the middle of the eye and are continued backward to the sides of the nape. Lores and ear-coverts deep vinous-brown; mantle much

like the crown, but less rufescent and shading into ferruginous on the lower back, rump, and wing-coverts; the outer primaries edged with hoary grey, the next few mostly black on the outer web, and the remaining quills with the outer webs ferruginous. Chin and throat white, *feathers of the lower throat with reddish-brown spots at the extremity of the shaft; chest and upper breast uniform vinous-buff*, shading into fulvous on the abdomen, flanks, and under tail-coverts; tail brown, washed with ferruginous towards the base of the outer webs. Total length 4·5 inches, culmen 0·43, wing 2·3, tail 2·0, tarsus 0·9.

A *second adult example* from the Manipur Hills is perfectly similar to the type.

In *three younger birds*, also from the Manipur Hills, the crown and sides of the head are much paler, the white superciliary stripes *absent*, and the white on the chin and throat suffused with pale vinous and spotted with reddish brown. The abdomen, sides, and flanks are *bright rust-red*.

Habitat. Naga and Manipur Hills.

VI.—*On Birds observed in the Goolis Mountains in Northern Somali-land.* By E. LORT PHILLIPS, F.Z.S., F.R.G.S.

(Plate II.)

ON January 4th, 1895, we left London in the P. and O. s.s. 'Rome,' bound for Aden, thence to Somali-land, where we hoped to spend a very pleasant three months, away from the cold and damp of an English winter. Of our party of five persons: my wife, Miss Edith Cole, and my brother-in-law, Mr. Frank Gunnis, were about to make their first trial of camp-life in Africa, while Mr. G. P. V. Aylmer and I were fairly old hands, having made several shooting-trips together. Arriving at Aden on the 21st, we were most hospitably entertained at Government House by General and Mrs. Jopp, and the A.D.C., Capt. J. O. Mennie, rendered us the most welcome assistance in getting together our servants and horses, for which we were very grateful.

Aden is not a particularly cheerful spot to make a pro-

longed stay at, and we were lucky enough to find that a small steamer, belonging to the great Parsee firm of Cowasjee and Dinshaw, was due to start for the Somali coast two days after our arrival. This just gave us time to make our necessary arrangements, and no more; so we embarked on the steam "cockle-shell" 'Tuna' on the evening of the 23rd, hoping to arrive at Berbera the following morning about 10; but, alas! our hopes were doomed to disappointment, and it was five in the evening before we sighted the Berbera light-house. Thoroughly as we subsequently enjoyed ourselves, none of us care to dwell on the horrors of that crossing.

Arrived at Berbera, we at once called on the Resident, Captain Cox, and Mrs. Cox most kindly had rooms prepared for my wife and Miss Cole, while Aylmer, Gunnis, and I had our tents pitched on the Maidan and spent the night under canvas. The next day was devoted to hiring camels, horses, and men, and we should have got off to the hills with very little delay, had not we three men been attacked with a violent sort of sickness which we attributed to "tinned provision poisoning," our cook, with economic zeal, having used for breakfast the contents of a tin that had been opened the day before. I had a very sharp attack, but used strong measures with myself, with the result that I was about again the next day, while the other two, who could not, at first, be prevailed upon to follow my example, were laid up for several days. For the benefit of those who may be similarly attacked, I will venture to give the secret of my treatment,—repeated doses of castor oil, with hot-water emetics. Having hired our camels and camp-followers, and an excellent lot of men they proved themselves to be, I started with the ladies for Dobar, a place about eight miles from Berbera, where we awaited our invalids, who joined us two days later. Dobar is a little oasis nestling among barren-looking hills, but it is of the utmost importance to Berbera; for it is from here that the latter place draws its water supply.

Tiny threads of the precious liquid, quite hot, ooze out of the rock in all directions, and would soon be absorbed by the parched ground around, were they not carefully

conducted into cisterns, whence the water finds its way by gravitation to Berbera through iron pipes laid down by the Egyptians during their occupation of the country. Remains of ancient stone culverts also exist belonging to a far earlier period. Around the cisterns trees have been planted and gardens laid out, the whole being enclosed within a strong zareeba, and from here weekly consignments of fresh vegetables are sent to Aden for the use of the troops. The garden is worked by an old ex-Egyptian soldier, Farragh by name, a native of the White Nile, assisted by about a dozen Berbera jail-birds who are "doing their bit of time," and a very easy "bit" too from all appearances; indeed, but for the fact of their having chains on their legs, one would hardly take them for convicts. At night they sleep in a ruined fort on a hill above the gardens built by the Egyptians as protection to the place.

Here we spent two very pleasant days collecting, and during the midday heat we made ourselves very comfortable with table, chairs, and books, under a spreading tamarind-tree which cast a shadow, "as that of a great rock," on the thirsty ground beneath. Above our heads the little Yellow Weaver-birds were very busy with their hanging ball-shaped nests, and it was delightful to watch them working with long streamers of grass or strips of palm-leaf. Grasping the half-completed structure firmly with their claws, they would poke one end of the material through the side, then they would run inside themselves and pull it through and poke the end out again and then come out and pull it, repeating the operation all round. Butterflies (Arabic "Birds of Paradise") and beetles were fairly plentiful, and it was most amusing to watch old Farragh's almost contemptuous astonishment with which he viewed the delight of the ladies at every new specimen. "What will the mem-sahibs do with these things?" he asked; "they are useless even for food!!"; but nevertheless he managed to catch a few himself, and brought them fluttering with one wing grasped firmly between a horny thumb and forefinger. From Dobar we marched to Bihen, passing the night at a waterless spot called Boosti. We started

again the next morning before the sun was up, reaching Bihen at tea-time, where we found the tents already pitched, for we ourselves had taken it easy on the march, and had rested for some hours in the shade of a large tree covered with creepers, where butterflies and Sun-birds were very plentiful.

Bihen is another oasis, caused by a strong spring of delicious water that comes bubbling out of the rock at the root of a large fig-tree. After forming two large pools, which, by the way, are full of small turtles, it loses itself in a dense mass of tall rushes, a favourite resort of lions a few years back. The bright green of the close-cropped sward and of the tall rushes is very grateful to the eye after the arid country through which the road from Berbera passes, so we decided to stay here for a few days. The following morning Aylmer started off to a sugar-loaf mountain called "Dimoleh." It has hitherto been marked on the maps as "Inaccessible Peak," the natives saying that no man had ever been known to reach the top. However, Aylmer and his two "boys" succeeded in reaching the summit after a stiffish climb. Hersi, one of the natives, gave a most amusing account of the horrors of the ascent in Somali-English, and finished up by saying: "If Mr. Elmer give me two hundred pound to go up again, I don't take him; what use two hundred pound if you no live to spend him?" Hersi was a great wag. While at Bihen we were visited by hundreds of baboons, who barked at us from the rocks above; they have a secure and safe sleeping-place close by, which has all the appearances of having been thus used for ages. It is an overhanging cliff, inaccessible from below; here on the upper ledges sleep the young ones and females, while the old males form a semicircle about the top, and woe to any prowling leopard which attempts a midnight raid.

From Bihen we made a short march to Gelloker ("place of the Little Bustard"), the country becoming more and more interesting as we approached the Goolis Mountains, the tops of which (curiously enough for this time of year) had been veiled in mist ever since we started. Tall

flat-topped mimosa-trees here take the place of the smaller bushes nearer the coast, while dense thickets of the ever-green arak, or toothbrush-tree, give shelter to Francolins, Guinea-fowls, and Lesser Bustards, as well as to many smaller birds, which seek seclusion in their dark recesses. It has been a matter of regret to us all that we only spent one day at Gelloker. Butterflies and birds were particularly abundant, and there were many tracks of antelopes. However, as water was very scarce, we decided to push on to Hammar, at the foot of the Sheik Pass, which we reached the next evening. Hammar is a really beautiful spot, but it is hardly a desirable camping-ground, having been used from time immemorial as a resting-place for caravans about to ascend the Pass. On a slight eminence in the rocky gorge stand three ancient tamarind-trees, the very soil beneath them consisting of the remains of countless campfires. Mountains rise abruptly on all sides, well clothed with timber, among which the giant, candelabra-like Euphorbia is most conspicuous. A tiny stream trickles down the gorge, forming pools at intervals, over which lovely butterflies hover for a moment and then sail away above the highest tree-tops, to the disgust of their would-be capturers. From crevices in the rocks hang clusters of the beautiful broad-leaved maidenhair fern. Near one of these pools I had an adventure, which might have had an ugly termination. I was waiting with a butterfly-net for the return of one of the aforesaid errant beauties, when I saw a snake gliding down over the smooth rock towards the water. To run forward and scoop him into the net was the work of a moment, and I congratulated myself on having obtained an unharmed specimen so easily. He struggled violently for a few minutes, but when he had quieted down I brought the net nearer my face to examine him, when suddenly I felt a slight spray upon my cheek and a sharp pain in my right eye. I flung down the net and went and bathed my face in the pool, then recaptured my captive, which had escaped, and hurried home to camp, where I dropped him safely into spirit. The pain in my eye now became much

worse, and I spent the rest of the afternoon in my darkened tent bathing it; however, towards sundown the pain lessened, and the next morning my eye was quite well again. Dr. Günther, to whom I subsequently showed the specimen, pronounced it to be a cobra, and said that had I had any abrasion of the skin, which would have allowed the poison to enter the system, the result might have been fatal. I feel that I have the greatest reason to be thankful for my escape, the more so as a few weeks later an old man came and begged for some medicine that would restore the sight to one of his eyes, and when I asked him how he had lost it, he replied, "Ten years ago a snake spit into my eye." While at Hammar, Gunnis brought in a little baboon; it was a poor weakly little thing that had not had strength enough to hold on to its mother's back while she bounded over the rocks. We hardly thought it would live, but the ladies tended it with the greatest care, with the result that it is now, together with a little female that we obtained later, a most popular show at the Zoological Society's Gardens.

Leaving Hammar, we ascended the pass by a beautiful new road lately engineered since the British occupation, such a contrast to the old rocky "staircase" existing formerly, when on two occasions it took from sunrise to sunset to get our caravan up it. Now all is plain sailing, and in about three hours from starting the camels emerged on to the level plain at the top, which forms one of the upper ledges of the Goolis range, 4000 feet above the sea. The view was magnificent, whichever way we looked. Away to the north lay Berbera, with its shipping and minaret just discernible through the shimmering tropical haze, while long white lines of surf divided the faint yellow of the maritime plain from the even paler blue of the sea. The intervening country, with its gleaming dry watercourses accentuated by the green of the trees along their banks, and the small round-topped hills, reminds one forcibly of a raised map. To the west, as far as the eye can reach, stretch the precipitous bluffs of the upper Goolis, while to the east Wagga Mountain, over 7000 ft. in height, looms faintly in the

distance. From the top of the pass the caravan route continues due south through an opening in the hills, past an ancient mosque-like tomb, or "Sheik," from which the pass derives its name.

Having travelled due south so far, we now turned sharply to the west along the Merzo ledge, our camps being Gooldoo Hamed, Geddinyarli, Darra As, Darra Sarri, Woob, and finally we descended again to the head of the great Hainwaina plain, or bay-like inlet at Dooloob, and worked our way back along the base of the hills, arriving at Bihen on the 20th April, and passing close to the base of the no longer inaccessible Dimoleh peak. Of all our different camps we give the palm to Darra As. The huge cedar-like junipers (*Juniperus procera*) there attain a size which we noticed nowhere else, while the open glades, resembling park-like spaces, were in the evening often covered with countless Guinea-fowls. Birds and butterflies were particularly abundant, but alas! large game is scarcer than it was some years ago. It was here that some natives brought us a little koodoo calf, which we managed, after infinite trouble, to bring alive to London, where it is to be seen at the Zoological Gardens. They also brought us a little klipspringer, which Miss Cole tended with the utmost care; but, alas! the little thing died at Dooloob. Leopards we found particularly fearless; they came into our camp five times, killing sheep and goats, but, to our shame, we never succeeded in slaying one of them in return, though we tried every device. Both the ladies were thirsting for their blood, and were particularly anxious that a leopard should be killed in revenge. They sat up with us on several occasions; my wife even climbing a large tree, and remaining with me from sunset till the small hours of the morning. The natives were not the least surprised at our non-success, declaring, with the old 'Were-Wolf' superstition, that these leopards were "Orgoobas," or witchfolk, and that they always knew when they were being waited for and would not come, but that they would bide their time. This belief was borne out by the fact that on one occasion, when we were at dinner and the camp ablaze

with light, a leopard had the audacity to spring into the sheep-pen—which was in the centre of the camp—and out again with one of our best milch-goats, but it got hung up in the tent-ropes, and had to relinquish its prey, which had its throat nearly bitten through.

At Dooloob we were brought two perfectly fresh Ostrich eggs, which proved delicious eating, one egg making both omelets and pancakes for five people. Wild Ostriches are getting very scarce, but there are a few on the Hainwaina plain. The Midgans (low-caste Somalis) keep tame Ostriches, and take the feathers to Berbera for sale.

The only bit of cultivation we saw the whole time after leaving Dobar was at Dooloob; here three brothers had cleverly laid out a garden with an irrigation-trench above it, so as to insure a constant supply of water. Their only tools were their spears, and they were so much struck with a spade and rake we had in camp that we promised to leave those articles for them with the Governor at Berbera when we quitted the country. So great, however, was their desire to possess these useful implements that one of the brothers appeared at Berbera the very day we arrived, having walked 50 miles in order that there should be no mistake about getting them; and there certainly was no mistake about his joy at becoming the proud possessor of them. After Dooloob our camps were Allareea, Djedanio, Oombayle, Gotten, Wadaba, Bihen, Faradairo, and then into Berbera. Gotten and Wadaba were both delightful spots; there had been several heavy local showers about a fortnight previously, so that when we arrived everything was wearing its brightest green, and the ladies made great botanical hauls. Of their dried specimens sent to the Herbarium at Kew 69 represent new species, including 3 new genera*, while their seeds, bulbs, and orchids have not yet made sufficient growth to be finally pronounced upon. Among our other collections, we were fortunate enough to obtain two new lizards, two new scorpions, two new spiders, and one new fossil coral, as well as the new *Corvus* and *Merula* mentioned hereafter.

* See "Diagnoses Africanæ," no. vii., in Kew Bull. 1895, p. 211.

Between Wadaba and Bihen we had a most exciting experience. We were now about to leave the foot-hills and strike out over the "red-hot" plain, so we decided to leave the camp before sunrise, and get over a good bit of ground before the great heat of the day, trusting to find some shady spot on our road, where we could rest till the evening. We passed several suitable places, but decided that they were not far enough on our way to warrant our stopping; however, the further we advanced the smaller we found the trees, which were decidedly dwindling as the distance from the hills increased. Our road lay along a glaring white water-course, and we were beginning to despair of finding a convenient place, when, far ahead, we spied a pillar of green apparently rising out of the white sand of the river's bed. We joyfully pressed forward and found, on a low flat island, two huge mimosa-trees completely covered with creepers, the rope-like stems of which hung down in festoons, nearly to the ground. We congratulated ourselves most heartily on this lucky find, and told the "boys" to get breakfast ready as soon as possible, as we were more than ready for it ourselves. On these occasions a camel always accompanied us, having on its back two large Scotch game-panniers, which not only held our food and drink for the day, but also books, papers, &c., as well as collecting-boxes, while on the top were tied folding chairs and table, and also ground-sheets; so we were able to make ourselves thoroughly comfortable. Breakfast over, we composed ourselves for a well-earned siesta. We had been asleep for about an hour, when Hersi came and touched me, saying, "Sahib, plenty rain comin'; can't you hear him shoutin' upstairs?" At the same moment I heard the roll of the thunder among the tops of the upper Goolis, accompanied by the peculiar hissing noise of a tropical downpour. I woke the others, and we hastily converted the ground-sheet into a tent, using the chairs and table as a wall on the weather-side. We had barely completed our arrangements before the storm was upon us. In our anxiety to keep our things dry, the possibility of lightning seems to have escaped us, and it was only

when we were cowering under our shelter that a loud burst of thunder over our heads reminded us of our rifles, upon which we were almost sitting. The situation was far from pleasant, for, apart from the fact of our having so much iron near us, the two tall trees under which we were sheltering were very likely conductors in themselves, being the only trees of their size for miles around. However, there was nothing to be done for it, as the only alternative was to stand outside and be drenched to the skin, and court an almost certain attack of fever. The storm raged overhead, and our trees, burdened as they were with their "top hamper" of creepers, seemed almost certain to crash down upon us. After about ten minutes' suspense the storm gradually moved off in an easterly direction. But now a new anxiety presented itself. We were encamped, as I said, on a little low island in the broad river-bed, and hardly had the storm abated when we heard the rush of advancing waters, which were hidden by a bend a little way above us. Soon a thick turbid flood came surging round the corner, and spread out on both sides of us from bank to bank. We were still two feet above the water; but masses of débris piled against the trees showed to what height previous floods had risen, and, as it was still raining in torrents among the hills, though it had ceased with us, we thought it wiser to put our things out of harm's way. So saddles, panniers, chairs, and rifles were lifted up into the loops of the creeper-stems above the highest flood-mark, we ourselves intending to follow when there was no longer any dry land left to stand on: however, we were spared this, and the water, having nearly deprived us of standing-room, began to abate. By 3 P.M. the river's bed was dry again, and we started on our way to Bihen, arriving there about 6.30. To our great relief, we found that the caravan had escaped the rain altogether. So very local are these tropical downpours that, though the caravan had only passed a few miles to the south of us, on the other side of Dimoleh, it had entirely missed the storm. Aylmer, who was shooting in that direction, escaped a wetting, while Gunnis, who was with us, was

thoroughly drenched, luckily, however, with no ill effects. Arriving at Berbera, we found the little Maidan all bustle and confusion; it was crowded with tents, as there were three shooting expeditions about to start for the far interior; while a gallant Colonel, lately commanding at Aden, had just arrived from beyond Hainwaina, having had his arm mauled by a lion. To our great joy we found the Royal Indian Marine troopship 'Mayo' in the harbour, and were kindly offered a passage over to Aden, which we gladly accepted. Captain Mennie again met us with an invitation to Government House, a delightful termination to a most charming expedition, which we had all of us thoroughly enjoyed.

In arranging the following field-notes, which give the results of our observations on the birds of the Goolis, I am gratefully indebted to my friend Dr. Bowdler Sharpe for his very kind assistance. In compiling them I have in most cases given references to Captain Shelley's paper on the birds of my former expedition (*Ibis*, 1885, pp. 389-418), and have followed nearly the order of classification adopted by him.

1. *PŒOCEPHALUS RUFIVENTRIS* (Rüpp.); Shelley, *Ibis*, 1885, p. 393.

These lively little Parrots are fairly common wherever the giant *Euphorbia* is to be found, and are often seen chasing each other with loud screams among the candelabra-like branches. The natives say that they breed in holes in the rotting stems; but I was never lucky enough to find a nest.

2. *IRRISOR ERYTHORHYNCHUS* (Lath.); Shelley, *Ibis*, 1885, p. 395.

These noisy, evil-smelling birds are fairly common both in the plains and on the Goolis range. They are gregarious, and small parties of 8 or 10 may be seen flying from one big tree to another. On the wing they are almost silent, but the moment they alight they set up a deafening chatter, and, holding tightly on to the bark, they throw themselves backward till their heads are level with their feet. They then regain the upright position and, raising their beaks, all chatter in concert, repeating this performance at each fresh

tree. They have a most disgusting smell, the cause of which I am unable to explain, and it was with the greatest repugnance that I managed to skin one specimen.

3. *UPUPA SOMALIENSIS*, Salvin, Cat. B. Brit. Mus. xvi. p. 13.

Upupa epops senegalensis, Shelley, Ibis, 1885, p. 397.

Very common, and does not seem to differ in its habits from the Hoopoe, which is such a familiar object along the banks of the Nile. It is quite fearless of man, and its great tameness may be accounted for by the fact that it is beloved by the Somalis, who look upon it as a harbinger of good times to come. One day, as I was watching one of the beautiful birds seated on an ant-hill close to the tents, a native who prided himself on his English said to me, "You know what he sayin'? He say hoot-hoot-hoot, plenty rain comin'; hoot-hoot-hoot, all the camels an' cows make young ones, all de goats an' sheep make young ones; hoot-hoot-hoot, plenty grass comin'." Who would not love the bearer of such good news?

4. *MEROPS NUBICUS* (Gm.); Shelley, Ibis, 1885, p. 397.

I was unable to obtain a specimen of this fine Bee-eater; but on the 7th of April I saw hundreds of them high in the air apparently making their way in a north-easterly direction. They were easily distinguishable by their bright carmine bellies.

5. *MELITTOPHAGUS CYANOSTICTUS* (Cab.).

Melittophagus pusillus cyanostictus, Shelley, Ibis, 1885, p. 398.

This little Bee-eater is one of the most familiar objects both on the march and in camp. It is to be seen everywhere perched on a prominent dry twig, or making its beautiful undulating flight in pursuit of some quickly-flying butterfly, which it invariably captures seemingly without an effort. Unless disturbed, it always returns with its prey to its own particular twig, in which it seems from long usage to have established a sort of vested right, to judge from the droppings and insect "débris" which are to be found underneath.

6. *MELITTOPHAGUS REVOILI* (Oust.); Shelley, *Ibis*, 1885, p. 398.

Far from common. Only two pairs were noticed on the lower slopes.

7. *CORACIAS GARRULUS*, Linn.; Sharpe, *Cat. B. Brit. Mus.* xvii. p. 15 (1892).

One specimen of the Common Roller was shot by Aylmer at Gotten, at the foot of the Goolis, early in April.

8. *CORACIAS NÆVIUS* (Daud.); Shelley, *Ibis*, 1885, p. 399.

This handsome bird seems to prefer the higher and more thickly wooded ledges of the Goolis to the open plain, where I only noticed it on two occasions. Among the euphorbias, however, it may be met with daily. Like its cousin, *C. lorti*, it is very noisy and pugnacious, often chasing Hawks, Crows, and even members of its own species to a great height, and then on its return earthward I have seen it turning over and over uttering loud cries as if in a paroxysm of delight at having vanquished its foe. Its food seems to consist of beetles and small lizards, and I have watched it catching the large yellow locust on the wing.

9. *CORACIAS LORTI*, Shelley, *Ibis*, 1885, p. 399.

This Roller, of which I obtained only two specimens in 1885, was very plentiful along the base of the hills, but I never noticed it on the upper "ledges" of the Goolis, where, however, *C. nævius* was fairly common. Like that species it was generally to be seen in pairs, and was far from shy, its harsh scolding cry seldom leaving one long in ignorance of its proximity. It is easily seen, as it loves to perch on the top of the highest tree, a dead branch being always preferred to a living one.

10. *SCHIZORHIS LEUCOGASTER* (Rüpp.); Shelley, *Ibis*, 1885, p. 400.

These handsome birds are fairly plentiful among the tall mimosas that grow along the banks of the "tugs" or water-courses, and have a curious habit of running about over the flat interlaced thorny twigs, more after the manner of

squirrels than of birds. Their cry strangely resembles the bleat of a goat, and I remember being bitterly disappointed in 1885, after a ten days' waterless march, to find that the welcome "baaing," which would have meant to us milk and water, proceeded only from a flock of these birds. Alas! the wells to which we had been pressing were dry and the herds had been moved elsewhere. The flight of this Touraco very much resembles that of the Magpie, and immediately on alighting they raise and lower their handsome crests.

11. *CENTROPUS SUPERCILIOSUS*, Hempr. et Ehr.; Shelley, Ibis, 1886, p. 400.

To this Cuckoo—so seldom seen, yet so often heard—the traveller is indebted for one of the most charming sounds heard on the march whenever the latter follows the course of running water, for the *Centropus* loves the dense masses of reeds which are always to be found in such localities. So shy, however, is it that it was only during last winter (my fifth spent in East Africa) that I was able to identify the beautiful familiar bell-like tones with the well-known bird occasionally seen scuttling away into covert at one's approach. Its song, if such it can be called, consists of ten clear distinct notes following each other down the scale with the utmost regularity. I had previously (I don't know why) attributed these sounds to a little bronze Dove, when to my delight and surprise, as I was waiting for large game, well hidden in a patch of reeds, I saw a Ground-Cuckoo steal out of another patch, when, doubtless thinking himself alone and unobserved, he mounted a stone and began to sing, repeating the song every few minutes; but he kept an anxious look-out from side to side as if in fear of being caught in the act, like a shy human amateur.

12. *CUCULUS GULARIS*, Steph.; Shelley, Cat. B. Brit. Mus. xix. p. 244 (1890).

Two Cuckoos were seen, at a place called Gotten, at the base of the Goolis range. Aylmer shot a specimen of *C. gularis*, so that the other Cuckoos observed were probably of this species.

13. *TERPSIPHONE CRISTATA* (Gm.) ; Shelley, *Ibis*, 1885, p. 400.

Fairly plentiful on the upper slopes in the euphorbias, among which the male endeavours to conceal himself, as if painfully conscious of his startling appearance; his movements seeming terribly handicapped by the long streaming white tail-feathers, which certainly give a most weird look. The little brown female, on the contrary, is extremely lively, flitting from bough to bough, uttering a sharp "chat-chat" the whole time. Though I have never actually seen her feeding her long-tailed mate, I feel almost sure that she must cater for him, as she is so incessantly active, while he remains hidden among the thick branches, and when he does take a short flight it is so laborious that the idea of fly-catching seems out of the question. I should, however, be very glad to have my theory corroborated.

14. *PACHYPRORA ORIENTALIS* (Heugl.).

Batis orientalis, Sharpe, *Cat. B. Brit. Mus.* iv. p. 136 (1879).

Always to be found in the neighbourhood of water.

15. *BRADYORNIS PUMILUS*, Sharpe, *P. Z. S.* 1895, p. 480.

This bird is generally seen in pairs. Its habits closely resemble those of the Redbreast.

16. *BUCHANGA ASSIMILIS*, Bechst. ; Shelley, *Ibis*, 1885, p. 401.

This handsome Flycatcher is very plentiful in northern Somali-land, being found from Berbera itself to the top of the Goolis range. It is also very fearless, often taking up a position on the hedge of the zareeba, attracted, no doubt, by the quantities of flies which invariably infest a camp in hot climates.

17. *LANIUS ANTINORII*, Salvad. ; Sharpe, *P. Z. S.* 1895, p. 477.

This specimen was unfortunately destroyed, but I managed to save the wings, and Dr. Sharpe says that there can be no doubt that the Shrike was of this species, with white

tips to the secondaries. On my former expedition I got a specimen of *L. dorsalis* (cf. Shelley, Ibis, 1885, p. 401), and now that *L. antinorii* is found in the same district of Somali-land, it is quite possible that Dr. Sharpe may be right, and that *L. dorsalis* and *L. antinorii* are merely sexes of the same species (cf. Sharpe, P. Z. S. 1895, p. 477).

18. *LANIUS PHENICUROIDES*, Sev.; Gadow, Cat. B. Brit. Mus. viii. p. 278 (1883).

Aylmer shot a specimen of this Shrike.

19. *DRYOSOPUS FUNEBRIS*, Hartl.; Gadow, Cat. B. Brit. Mus. viii. p. 133.

This Bush-Shrike keeps well out of sight in the thickest clumps of the arak, or toothbrush-tree, among which its beautiful metallic note may be heard at any time of day. So shy, however, did I find it that it was only after a good deal of creeping about on my hands and knees that I was able to identify the bird with the note.

20. *LANIARIUS CRUENTUS* (Hempr. et Ehr.); Shelley, Ibis, 1885, p. 402.

This lovely Bush-Shrike is to be met with on all open spaces on the Goolis, as it seems to avoid the thickets altogether. It is far from shy and may be seen towards sundown in small parties, going through the most ridiculous antics. They chase each other solemnly round and round some big stone with outspread wings and tail, or else, perched on a dead bough, bob up and down to each other and all the time utter two metallic notes such as might be produced by a child's mouth-organ. During this pantomime they seem to be in a state of ecstasy, and may be approached within a few yards before they appear to be conscious of one's presence.

21. *PRIONOPS POLIOCEPHALUS* (Stanley); Shelley, Ibis, 1885, p. 403.

I only noticed one flock of these weird-looking "Camel-birds" during the whole trip, although in 1885 they seemed fairly common towards the Debbe river. This flock I saw early in April, at Gotten, at the foot of the Goolis, where it

may have been simply resting during the general migration which seemed to be taking place. I have called them "Camel-birds," as their flight and cry forcibly remind one of the Camel-bird, *Buphaga erythrorhyncha*; but I have never actually seen them feeding on the camels' backs, though I am nearly sure I saw them perched on the grazing cattle in 1885. The curious yellow fleshy excrescence around the eyes gives them a very "uncanny" appearance.

22. *EUROCEPHALUS RUEPPELLI*, Bp.; Shelley, Ibis, 1886, p. 303.

These birds are fairly numerous in the thickly-wooded districts, their white rumps making them very conspicuous when on the wing. Early in March I watched a pair for some time busily engaged on a nearly-completed nest, which was, for such large birds, a miracle of ingenuity. It was built almost entirely of spiders' webs with a foundation of moss, and looked like a magnified nest of a Humming-bird. It was stuck against the side of a tallish tree, about 12 feet from the ground, and at a little distance could scarcely be distinguished from the bark.

23. *HYPOLAIS LANGUIDA* (H. & E.); Seebohm, Cat. B. Brit. Mus. v. p. 80 (1881).

Of this species only one was seen, which was shot near Berbera on Feb. 1st.

24. *MERULA LUDOVICIÆ*. (Plate II.)

Merula ludovicicæ, Lort Phillips, Bull. B. O. C. iv. p. xxxvi; Ibis, 1895, p. 383.

I was delightfully reminded of our English Blackbird when I first saw an example of this new species. It was early morning, the bushes and grass were glistening with dew, and under a gigantic cedar I caught sight of a dark grey bird with yellow bill and feet hunting for worms in the truly orthodox manner, whilst on the topmost bough another was pouring forth his morning song. I watched them for some time and then continued my way, as I only had my rifle with me. It was, however, some days before I was able to



obtain a specimen, and then I was lucky enough to find a nest containing two eggs in a thick bush, much resembling a box-tree. I also shot both the male and the female, which have been admirably figured in Plate II.

I have named this new species after my wife, who is a keen observer, and was a very great help to me with my collection.

The nest is a coarsely-made structure of small twigs and bark, peeled off in strips and intertwined with the sticks and a few straws. The lining is of dried grass with a few leaves, and there is a little moss on the outside of the nest. The eggs were two in number, of a very delicate type for a Blackbird. The ground-colour is a very pale greenish blue, plentifully sprinkled with tiny spots of rufous, clouding together at the longer ends; the underlying markings and spots are faint purplish grey. Axis 1.1 inch, diam. 0.75.

25. *MONTICOLA RUFOCINEREA* (Rüpp.) ; Seebohm, Cat. B. v. p. 327 (1881).

An adult male was procured.

26. *MYRMECOCICHLA MELANURA* (Temm.).

Myrmecocichla cinerea, Seebohm, Cat. B. Brit. Mus. v. p. 358.

I met with a couple of these birds on the bare hills at Dobar. They consisted of an old bird and a young one, and the latter was being fed by the parent. The nestling plumage is thoroughly Chat-like, and the feathers are tipped with sandy buff.

27. *SAXICOLA PHILLIPSI*, Shelley, Ibis, 1885, p. 404.

Fairly common both on the Berbera plain and on the upper ledges of the Goolis, wherever open spaces are to be found. Its habits do not seem to differ from those of other Chats.

28. *SAXICOLA DESERTI*, Temm. ; Shelley, Ibis, 1885, p. 405.

Plentiful on the Berbera plains.

29. *SAXICOLA ISABELLINA*, Rüpp.; Shelley, *Ibis*, 1885, p. 405.

This Chat, like the *S. deserti*, was plentiful on the Berbera plains in February.

30. *RUTICILLA PHÆNICURUS* (Linn.).

An adult male bird was procured. The Redstart was fairly common on the higher ground where, on March 15th, I found a pair nesting in a hole of a tree overhanging the path. The same day I saw a Bluethroat but failed to get it.

31. *ERYTHROPYGIA LEUCOPTERA* (Rüpp.); Shelley, *Ibis*, 1885, p. 406.

This species frequents the open plains, and may be seen dodging about among the low mimosa-bushes. When on the wing it spreads out its tail like a fan, but for which peculiarity it would often escape notice.

32. *CALAMONASTES SIMPLEX* (Cab.); Sharpe, *Ibis*, 1892, p. 154.

This remarkable little bird is fairly plentiful among the low foot-hills, but I never noticed it on the upper ledges of the Goolis. For so small a bird, it has a loud and almost startling note, resembling the sound that would be produced by striking two thin pieces of very hard dry wood together. When first I followed up the sharp "click-clack, click-clack," I was quite prepared to see a largish bird, but instead of this, there was a tiny creature in an ecstasy of excitement emphasising the two loud notes by raising itself up on the first and coming sharply down on the second. The peculiar up-and-down movement of our common Dipper when perched upon a rock after a short flight will serve well as an illustration of this bird's antics.

33. *CRATEROPUS SMITHI*, Sharpe, *Bull. B. O. C.* iv. p. xli; *id.* *P. Z. S.* 1895, p. 487.

This noisy bird is far oftener heard than seen, as it keeps out of sight in the thick bushes. I have never noticed it on the plain, but on the upper ledges of the Goolis it must be fairly common. Its usual cry is a sort of harsh chattering,

but it is also gifted with mimicry, imitating the call of the Guinea-fowl so well that on several occasions members of our party were completely deceived, not to say horribly disappointed, after a stealthy creep through the bushes. For, instead of the expected "family shot" and subsequent luscious roast for which the hungry soul yearned, behold a flock of useless chatterers, which fly off, evidently delighted with their little joke.

34. *ANTHUS SORDIDUS*, Rüpp. ; Sharpe, Cat. B. Brit. Mus. x. p. 560 (1885).

A female bird shot by Aylmer at Durra Surri.

35. *ANTHUS RUFULUS*, Vieill. ; Sharpe, Cat. B. x. p. 574 (1885).

A male, also shot by Aylmer at Woob.

36. *MOTACILLA BOREALIS*, Sundev. ; Sharpe, Cat. B. x. p. 522 (1885).

Fairly common, and seen hunting for insects among the feet of the feeding cattle, as at home.

37. *CINNYRIS HABESSINICUS* (Hempr. & Ehr.) ; Shelley, Ibis, 1885, p. 406.

This living gem is extremely common in the Goolis range, and both high up and low down it is one of the most familiar objects of bird-life. Whilst on the wing it utters continually a sharp "chat-chat-chat," as if to draw attention to its flashing colours. That it was breeding I feel sure, but we looked for its nest in vain. Miss Cole found a beautiful little hanging nest resembling a "Bottle Tit's," made of cobwebs, with a regular pent-house protecting the entrance ; but we failed to identify its owner, though we strongly suspected it belonged to *C. habessinicus*.

38. *CINNYRIS OSIRIS*, Finsch ; Shelley, Mon. Sunb. p. 215.

This specimen was first seen by my wife, and was the only one obtained. It was among the large-leaved colchicums (?), where it was feeding in company with *C. habessinicus*. We had great hopes that it would prove a new species, for I had

never seen one before, though both *C. habessinicus* and *C. albiventris* were exceedingly numerous.

39. *CINNYRIS ALBIVENTRIS* (Strickl.); Shelley, Mon. Sunb. p. 233, pl. lxxiii.

This exquisite Sun-bird is common both on the hills and on the plains, where it may be seen in company with its dowdy little mate wherever the mimosa is in blossom or the aloe hangs its crimson and yellow bells. It is very fearless, and does not seem to mind being watched in the least.

40. *TEXTOR DINEMELLI*, Horsf. ; Shelley, Ibis, 1885, p. 409.

Only seen along the foot of the Goolis range, where it was breeding in small colonies in March and April. The nests are huge clumsy affairs placed at the extremity of the boughs of the taller mimosa trees and look like flat masses of the sharpest thorns; the entrance, however, is from below, and the interior is lined with soft grasses. The eggs are pale blue, dotted with dark brown spots.

41. *BUPHAGA ERYTHORHYNCHA*, Stanley ; Shelley, Ibis, 1885, p. 410.

Somali name "*Hoorie*."

As soon as the camping-ground has been reached and the camels turned out to graze, these noisy plagues put in an appearance, and, swooping down upon the tired beasts, commence a systematic hunt all over their bodies for ticks &c., running with the greatest ease over the backs and under the bellies of the camels, which, far from appearing pleased at their attentions and at being rid of their disgusting parasites, try to knock the birds off, wherever they can reach them with their long necks. The movements, and the facility with which the birds run up and down the camels' sides, remind one of the Woodpecker, and, like the latter, who always tries to keep a tree-trunk between himself and the observer, they will also, on the near approach of man, run round to the further side and peep at him over the ridge of the camel's back. The natives detest them, declaring that they not only worry the feeding camels, but also aggravate their sores and,

by pecking away at the exposed flesh, prevent their healing. Surely the baggage-camel's lot is not a happy one!

42. *COSMOPSARUS REGIUS*, Reichen. ; Shelley, *Ibis*, 1885, p. 411.

This bird is far from plentiful, but is to be met with on the open plains in small parties of three or four. I never noticed it in the thickly-wooded parts of the Goolis, nor could I find out where it nested. A flock of these gorgeous birds in the dazzling sunshine is a sight not to be forgotten.

43. *AMYDRUS MORIO* (Linn.) ; Sharpe, *Cat. B. Brit. Mus.* xiii. p. 161.

These Grakles frequent the highest part of the Goolis range, and are always to be found in the neighbourhood of the precipitous cliffs which crown the range and are in many places quite perpendicular for some hundreds of feet. These cliffs are studded with wind-worn cavities varying in size from a pigeon-hole to a good-sized cavern. In the former the "Morios" make their homes, flying in and out after the manner of Jackdaws, and indeed, when seen from above, lying flat at the edge of the cliffs, the male (?) bird, with his grey head and noisy cry, greatly resembles our familiar "Jack." The larger holes are tenanted by Vultures, Hawks, Eagles, and Owls, and seem to be a general breeding-place for Northern Somali-land, as from the top of the cliffs the land slopes away southwards hundreds of miles, and forms a vast undulating plain, while towards the north there is a rapid fall of 6000 feet in the short space of 40 miles which intervenes between the Goolis and the sea.

44. *NOTAUGES SUPERBUS* (Rüpp.) ; Shelley, *Ibis*, 1885, p. 412.

This lovely Starling is one of the most familiar objects of bird-life in Somali-land. It is a persistent camp-follower, showing little or no fear of man, hopping about over bales and boxes and peering into the tents, its little white eyes gleaming with intelligence all the while. We found it breeding in small colonies during March and April, the nests being placed far out on the boughs of the taller

mimosas. Like those of *Textor dinemelli*, they are protected from above by a covering of the sharpest thorns, the entrance being from below.

45. *LAMPROCOLIUS CHALYBEUS* (Ehr.); Sharpe, Cat. B. Brit. Mus. xiii. p. 176.

This Starling—unlike *Notauges superbus*, which was always with us—was met with only at one place on the upper Goolis, called “Darra As,” where there was a small plateau covered with a short heath, among which I saw about twenty pairs daily while we camped there. That they were so local was all the more extraordinary as we came across several of such plateaux. The birds differ again from *Notauges superbus*, to which they must be closely allied, in their choice of breeding-places, for while the latter species, like *Textor dinemelli*, makes huge thorny structures at the ends of the mimosa boughs, *L. chalybeus* prefers holes in the trunk of some big tree. Indeed, a pair had a nest in a cleft of a cedar under which we were encamped, and reminded us forcibly of our common Starling in their noisy attendance on their young.

46. *CORVUS EDITHÆ*, Lort Phillips, Bull. B. O. C. iv. p. xxxvi; Ibis, 1895, p. 383.

Only four of these birds were seen during the whole trip. At Dejamio, in the Hainwaina Plain, I was writing in my tent, and, hearing a distinctly different caw-caw to that of our usual camp-followers, I went out and saw two brown Crows seated on a koodoo head that had been put outside the zareeba hedge for the birds to clean. Directly they saw me they flew away, but came circling back over the camp nearly out of shot. However, I was lucky enough to drop one, to the huge delight of the natives, who never cease to wonder at a bird being shot flying. The other bird flew straight away. Three days later I saw another pair about five miles from camp, but as I only had a heavy rifle with me I could not get one. Was this a fresh pair, or had the survivor mysteriously supplied itself with a mate, as Ravens have been reported to have done in districts where only a solitary pair

was previously known to exist, one of them having come to an untimely end?

I have named this new Crow after Miss Edith Cole, who accompanied our party to Somali-land.

47. *VINAGO WAALIA* (Gm.) ; Salvad. Cat. B. Brit. Mus. xxi. p. 15.

Wherever the huge fig-tree is to be found these lovely Pigeons make their home in the thick branches, finding not only a plentiful supply of food, but also the grateful shade which seems essential to them. I have never seen them flying about except in the cool of the evening or when disturbed. Indeed, so loath are they to leave the shade that I have often known them to sit motionless without betraying their presence for more than an hour while we have been eating luncheon below, when suddenly, as if unable to bear their enforced stillness any longer, they would dash out with a whirr-r-r of wings that was quite startling.

48. *PTERNISTES LEUCOSCEPUS* (Gray) ; Ogilvie Grant, Cat. B. Brit. Mus. xxii. p. 181, pl. viii. (1893).

Fairly common wherever there is thick undergrowth. It is very noisy at sunrise and sunset, its cry being a harsh grating sound, which it repeats over and over again. At such times it may be seen in the little open glades, but it will take covert again the moment it thinks itself observed. It is capital eating, and will rise well once, but is difficult to flush a second time. We found several nests in March and April containing from seven to ten eggs, the shells of which are so hard that one can rattle them about together without the least fear of their breaking. When once caught these birds are very easily tamed, and I was fortunate enough in 1884 to bring home alive a pair of this species as well as a pair of *Francolinus granti*, which were, I believe, the first ever received by the Zoological Society.

49. *FRANCOLINUS GRANTI*, Hartl. ; Ogilvie Grant, Cat. B. Brit. Mus. xxii. p. 148 (1893).

This little "Partridge" is far oftener seen than *Pter-*

nistes leucoscepus, as thick covert does not seem to be so essential to it. Like the latter, it is very noisy in the morning and evening, and has a surprisingly loud, harsh cry for so small a bird. It affords capital sport, as it rises well, and its flesh, though rather dry, is always a welcome change.

50. *LOPHOTIS GINDIANA* (Oust.); Sharpe, Cat. B. Brit. Mus. xxiii. p. 292 (1894).

This little Bustard, called "Gello" by the Somalis, is very plentiful on the flat ground, where, however, it is much oftener heard than seen. Its cry is rather mournful; beginning low down, it mounts the scale in a series of double notes, the bird itself not infrequently, at the end of its "song," rising high into the air with rapid beating of the wings, and when a sufficient height has been gained it will throw back its head and neck till they seem to rest on its back, and then flutter slowly to the ground, as if in a dying condition. We found them breeding in March and April, and several beautifully-marked round eggs were brought in by the boys; in each case the nest contained two.

Of the Great Somali Bustard, called "Saramudly" by the natives, Aylmer obtained one specimen, which was too much damaged by the bullet to make a 'skin' of: its flesh, however, proved excellent for the table. In 1878 I flushed a female from a nest containing two eggs.

51. *CURSORIUS SOMALENSIS*, Shelley.

Cursorius gallicus somalensis, Shelley, Ibis, 1885, p. 415.

Having reached the top of the Sheik Pass, I started off with my 'boy,' Aden Arrali, in the hope of falling in with another flock of the Somali Courser, as I had done 10 years previously. In vain he tried to assure me that no birds were to be found on the arid ground to which we made our way. At last I reached the well-remembered spot, but, alas! no Coursers were to be seen, and I sat down, hot and tired. I was almost smiling to myself that I should have been sanguine enough to expect to find in the identical place the descendants of the flock out of which I obtained my first specimens, when suddenly something moving among the

stones caught my eye, and there, within a few yards, were three Coursers, the colour of which so exactly matched the surrounding objects that they had even escaped the sharp eyes of my boy, till one of them stretched out its wing over its extended leg. I promptly secured all three of these victims of misplaced confidence, and returned to camp well pleased with myself. These were the first and the last that I met with during the whole trip.

VII.—*Further Notes on Tunisian Birds.*

By JOSEPH I. S. WHITAKER, F.Z.S.

ALTHOUGH prevented from visiting the Regency myself this year, I am nevertheless able to give another short list of some additions to my collection of Tunisian birds, the greater number of which were obtained by Mr. O. V. Aplin during a collecting tour lately made by him in Tunis on my account.

The list also includes a few species of which specimens have been received from the Tunisian naturalist, M. Blanc, and four others, examples of which were obtained by myself last year, but were inadvertently omitted in my last list (*Ibis*, 1895, p. 85).

With regard to Mr. Aplin's journey I need merely say that he started on his travels in January last, going first south from Gabes, towards the Tripoli frontier, and then working round, and gradually travelling north, till he finally reached Ghardimaou in the Tell country, where his collecting trip ended about the middle of June. As may be seen from the accompanying map (p. 88), Mr. Aplin got over a good deal of ground, and visited districts not previously worked by myself, or by any of my collectors; but unfortunately, the season was exceptionally dry, and bird-life in the far south seems to have been more wanting than usual this year, thus accounting for a somewhat disappointing result, so far as that part of Tunis is concerned. At the same time, however, although meeting with but few birds new to my collection, Mr. Aplin came across and secured specimens of several interesting southern species already recorded by me, the



MAP OF TUNIS, SHOWING MR. APLIN'S ROUTE.

Chats and Larks naturally being foremost in the number. Of the *Saxicolinæ* he met with all those previously obtained by myself, including *Saxicola lugens*, and the two forms of Black-throated Chat, *S. stapazina* and *S. melanoleuca*. In the way of Larks, besides *Rhamphocorys clot-bey* and *Alauda arborea*, new to my collection, he met with all those alluded to in my former papers in this Journal, with the exception of *A. cinctura*. Of *Chersophilus margarita* he got five specimens, all very rufous in colour, and more so even than the specimen obtained by myself last year. Of the Crested Larks he found the four species or races treated of in my papers, but, like myself, failed to meet with the typical *Alauda* (*Galerita*) *cristata*. Mr. Aplin's specimens and observations, I may here say, confirm entirely what I have already written on the subject of the Crested Larks found in Tunis.

I take this opportunity of observing that Dr. Koenig, in his interesting work on the Ornithology of Algeria (J.f.O. 1895, p. 413), alluding to the pale Crested Lark described by me in my previous paper in 'The Ibis' under the name of *Alauda cristata pallida* (Ibis, 1895, p. 100), must surely be in error when he refers it to *Galerita arenicola* (Tristr.). Putting aside the question of the specific distinctness of *G. arenicola*, of which Canon Tristram himself was in doubt (Ibis, 1861, p. 414), and which I believe is not now generally admitted, Canon Tristram, when speaking of this Lark (Ibis, 1859, p. 426) very clearly states that its bill "is extremely elongated, slender, and curved, its length being '9 inch from the gape.'" Again further on, comparing the bill of *G. arenicola* with that of *G. macrorhyncha*, he says "in both species the extremity of the bill is rounded and dilated, instead of running to a point, as in other *Galeridæ*." Now *A. cristata pallida*, as Dr. Koenig himself states, is a short-billed form, its culmen, in most of my specimens, measuring half an inch, or just over that, and moreover being distinctly pointed, and not blunted at the tip. Should this pale form of Crested Lark be considered sufficiently distinct to be separated from the others, its name, I think, must therefore stand as *ALAUDA CRISTATA PALLIDA*, with the following description:—

Like *Alauda cristata thecklæ*, but much paler, and of a light sand-colour.

Ad. ♂. Total length 6 in., wing 3·9, tail 2·2, culmen ·55, tarsi ·8.

Ad. ♀. Total length 5·5 in., wing 3·6, tail 2, culmen ·5, tarsi ·8.

Hab. Tunisian Sahara.

In my rather large series of Crested Larks from South Tunis, I have several specimens which correspond in some measure with Canon Tristram's description of *G. arenicola*, but I have placed these under *A. macrorhyncha*. The large-billed Larks certainly differ among themselves to a considerable extent, apart from any difference there may be between the sexes of each individual race, and I have in my collection three fairly distinguishable varieties, coming from different districts, viz. :—No. 1, a very large and very pale bird; no. 2, a smaller and darker bird; and finally no. 3, also a smaller, but a pale bird. I had not, however, intended speaking of these local forms of large-billed Larks, for the present at any rate, or until I had made further and fuller investigation into the matter, but Dr. Koenig, I see, has forestalled me in his above-mentioned work on the ornithology of Algeria, although he seems to have noticed but two varieties. While, without doubt, these can merely be looked upon as local, sedentary forms, modified according to the climate and natural characteristics of the district in which each particular form may occur, it is nevertheless highly interesting to notice to what an extent such modification can be, and is, carried by natural causes; and in no family of birds, perhaps, is this better exemplified than in that of the Larks.

Apologizing for this digression, and returning to Mr. Aplin's journey, I may say that in the north of the Regency he met with much better luck than in the south, obtaining specimens of several species new to my collection, among others *Garrulus cervicalis*, *Picus numidicus*, *Gecinus vaillanti*, *Parus ledouci*, and *Pycnonotus barbatus*, all procured in the neighbourhood of Ghardimaou, where the country is thickly wooded and well watered.

In conclusion, I may observe that besides the species which appear in the subjoined list, of which specimens were actually obtained, Mr. Aplin met with a few others, not included in my previous lists, as to the identity of which he had little or no doubt whatever, but I have preferred not to introduce these.

Except when otherwise stated, the observations on the different species in the following list are taken from Mr. Aplin's field-notes, with which he furnished me on his return home.

1. *SAXICOLA ISABELLINA*. (Cat. B. Brit. Mus. v. p. 399.)

M. Blanc has sent me specimens of this Chat from Tatahouine, in the south of the Regency. I never came across it myself, nor did Mr. Aplin meet with it during his late journey, so I think it must be looked upon as rather a rare bird in Tunisia, which is perhaps the extreme western limit of its range.

2. *SYLVIA HORTENSIS*.

I got a specimen of the Garden Warbler last year, but overlooked it when making out my list. The species is not uncommon in Tunis in spring. Mr. Aplin also found it near Ghardimaou.

3. *SYLVIA SARDA*. (Cat. B. Brit. Mus. v. p. 33.)

I have specimens of this Warbler both from Mr. Aplin and M. Blanc. Fairly common in the south in winter, it frequents the low bushes bordering the dry river-beds, and is found also on the lower hillsides. It utters a harsh alarm-note, somewhat like that of *S. melanocephala*.

4. *SYLVIA DESERTICOLA*, Tristr. (Cat. B. Brit. Mus. v. p. 32.)

This is another of the birds which should have been included in my last list. On re-examining my specimens of Warblers I found two regarding the identity of which I had some doubt, and a suspicion then formed in my mind that they belonged to the present species was subsequently confirmed on seeing Mr. Dresser's plate and description of *Melizophilus deserticola* in Part II. of his supplement to the 'Birds of Europe.' I obtained my specimens towards the end of March in the Aleppo-pine woods between Tebessa and Feriana,

and I believe I met with the species again on the Djebel Sel-loum, also a pine-clad mountain, near Kasrin, but I never found it anywhere further south, nor do any of my collectors appear to have met with it in the Tunisian Sahara, either in winter or in spring. Canon Tristram discovered this bird in the South Algerian Sahara between Nov. 29 and Dec. 23 (Ibis, 1859, p. 58), when it was presumably in winter quarters, and this seems to be the only record, thus far, of its occurrence at any great distance from the Aures and Nemencha Mountains, which may perhaps be looked upon as the summer quarters of the species. Whether it occurs throughout the entire range of the Saharan chain of mountains remains to be seen. Dr. Koenig, although constantly on the look-out for it, failed to meet with it in the South Algerian Sahara in spring, but found it, breeding, further north near Batna (J. f. O. 1895, p. 290), in which district Mr. C. Dixon had previously rediscovered the species in the spring of 1882 (Ibis, 1882, p. 565). Apparently there is a considerable difference between the summer and winter plumages. My specimens, having been obtained towards the end of March, are naturally in breeding-plumage, or almost so. It would be interesting to know something more of this bird's movements during winter. With reference to its breeding and summer life we are indebted to Dr. Koenig for some very detailed and interesting notes.

5. *HYPOLAIS POLYGLOTTA*. (Cat. B. Brit. Mus. v. p. 79.)

I have specimens of this species both from Mr. Aplin and M. Blanc. Fairly common in the north, among the wild-olive woods and on the bushed hillsides, but never very high up. Its song is very rich and varied, with some remarkably clear notes.

6. *HYPOLAIS ICTERINA*.

Also common in the north, but found generally at a lower level than the preceding species. Very plentiful among the thorny shrubs, and oleander clumps bordering the river Medjerdah near Ghardimaou. Its song, although rather pretty, is inferior to that of *H. polyglotta*, and partakes more

of the character of that of the true *Acrocephali*, although not so much as the song of *H. pallida*. This last-named species is, however, altogether more *Acrocephaline* generally in its ways and habits.

7. *ACROCEPHALUS PHRAGMITIS*.

Found at Gafsa, Source des Trois Palmiers, and near Ghardimaou, though never common anywhere.

8. *CISTICOLA CURSITANS*. (Cat. B. Brit. Mus. vii. p. 259.)

Found near Gabes, and at Source des Trois Palmiers.

9. *PARUS MAJOR*.

Found only in the high oak and cork woods near Ghardimaou, and El Fedja, where it was fairly common.

10. *PARUS LEDOUCCI*. (Cat. B. Brit. Mus. viii. p. 44.)

Also found at Ghardimaou and El Fedja, though less abundant than the preceding species, and occurring only in the oak forests, which are at a higher level than the cork woods. The range of the Algerian Cole Tit appears to be confined to the wooded mountains of the North. Certainly I never met with it in the South, or even in Central Tunis, where the sole representative of the Tit family would seem to be *P. ultramarinus*.

11. *CERTHIA FAMILIARIS*.

Fairly common in the woods near Ghardimaou, where it was breeding. A nest with young in it found on 20th May, and young on wing met with in the second week of June.

12. *ANTHUS CERVINUS*.

I have specimens of this Pipit both from Mr. Aplin and M. Blanc. The former found it at the Source des Trois Palmiers, and near Kairouan towards the end of April. M. Blanc obtained his specimens in the far south in the early winter. In habits the Red-throated Pipit seems greatly to resemble the Meadow-Pipit, but its note is altogether different. Both species were seen and heard on the same day.

13. *PYCNONOTUS BARBATUS*. (Cat. B. Brit. Mus. vi. p. 146.)

The Dusky Bulbul was fairly common in the wild-olive woods, and *macchia* of myrtle, cistus, &c., bordering the

streams of the Medjerdah Valley, as also on the slopes of the adjacent hills, but never in high forest. A shy bird, and much oftener heard than seen. Call-note or song rich and clear. The following fairly expresses it:—"tit, wot, wot, tit, tit," uttered sometimes from top of a bush.

The present species apparently does not occur far south of the Tell Mountains, although it extends westward into Algeria and Morocco, where it appears to be much commoner than in Tunis.

14. *LANIUS FALLAX*. (Cat. B. Brit. Mus. viii. p. 247.)

Mr. Aplin brought home with him a specimen of Grey Shrike differing entirely from the ordinary form found in South Tunis, which is *L. dealbatus*, or *L. elegans*, according to Dresser. I was at first inclined to consider this Shrike a hybrid between *L. dealbatus* and *L. algeriensis*, but on further consideration, and on comparing it with the specimens in the British Museum labelled *L. fallax*, I find it agrees so closely with these, being indeed I may say absolutely identical with some of them, that I have decided to refer it to the present form.

Mr. Aplin secured the specimen in question, a female, near Gabes on the 27th January last, and apparently it was the only one of this form that he met with. Had the locality been further north, where *L. dealbatus* and *L. algeriensis* meet, there would have been more reason, perhaps, for supposing it to be a hybrid, and less in favour of its being *L. fallax*.

I believe this is the first recorded instance of *L. fallax* having been found in this part of North Africa, although it occurs both to the east and to the west, viz. in N.E. Africa, Palestine, and further east on the one side, and in the Canary Islands on the other. Such being the case, therefore, the fact of this Shrike occurring in South Tunis is perhaps not to be wondered at, the wonder, if any, being that it should not be of more common occurrence there. It would be interesting to know whether this form be more common further south than Tunis, in Tripoli for instance, which

lies more in the same degree of latitude as the hitherto recognized habitats of *L. fallax*. It is quite possible that the bird found by Mr. Aplin may have strayed northwards, along the sea-coast to Gabes.

While on the subject of Grey Shrikes I may observe that I have among my numerous specimens from South Tunis a few which differ from the ordinary type of *L. dealbatus* in having the grey of the upper parts tinged with an ashy brown shade instead of being of a pure French-grey, the white alar patch also being much smaller, the secondaries having much less white in them, and the darker tail-feathers being brown instead of black. The underparts, however, are pure white, as in the typical bird. These are probably immature birds.

15. *MUSICAPA COLLARIS*.

I have specimens of the White-collared Flycatcher both from Mr. Aplin and from M. Blanc. The former found it at the Source des Trois Palmiers, but nowhere else, and apparently it is not a common species in Tunis. It frequents low bushes near water, and in its habits resembles its congener the Pied Flycatcher.

16. *COTILE RUPESTRIS*. (Cat. B. Brit. Mus. x. p. 109.)

Only met with on one occasion, viz. on the 11th April, in the rocky gorge near the Source des Trois Palmiers, where three or four individuals were flying about, in company with some White-rumped Swifts (*Cypselus affinis*).

17. *COCCOTHAUSTES VULGARIS*.

Mr. Aplin shot a male Hawfinch on the 14th May, in a wild-olive wood in the Medjerdah Valley. Contrary to what one would have expected, this specimen was of a very dull colour, and more like our English bird than the brighter-coloured form found in South Europe.

The Hawfinch is apparently not a common bird in Tunisia, although so plentiful in Sicily and Southern Italy generally.

18. *EMBERIZA CIRLUS*.

Met with only in the Medjerdah Valley, on the shrubbed hillsides, where a pair was secured after considerable trouble.

A few others were seen, but the species does not appear to be so common in Tunisia as it is further west.

19. ALAUDA ARBOREA.

I have specimens of the Wood-Lark both from Mr. Aplin and from M. Blanc. The former found it in the north, in the month of May, when it was evidently breeding. M. Blanc met with it in the early winter in the far south, viz. at Zarzis on the sea-coast. Although the species thus seems to have an extensive range, it is not a common bird in the Regency.

20. RHAMPHOCORYS CLOT-BEY. (Cat. B. Brit. Mus. xiii. p. 527)

Mr. Aplin met with this Lark—a true desert species—on two occasions only, viz. at the desert wells of Bir Ghezen and Bir Abdallah, to the S.E. of the Chott Djerid, securing one specimen at the first-mentioned place. At the latter place he saw three or four others, in company with some Short-toed Larks, but failed to obtain another example. The country in the above districts is either bare, or sparsely dotted with scrub vegetation.

This species seems to have a very restricted range in Tunis, and even where it occurs it is by no means abundant. Further west, in the Algerian Sahara, I believe it is commoner, and near Ain Sefra, in the province of Oran, I understand it is plentiful*.

21. GARRULUS CERVICALIS. (Cat. B. Brit. Mus. iii. p. 98.)

Found in small numbers in the high oak woods near Ghardimaou. Their cry and habits resemble those of the common Jay.

22. CYPSELUS APUS.

Met with the first on 20th April, on the march to El Djem, and subsequently at Kairouan and at Ghardimaou. The Common Swift is plentiful, and breeds at Tunis and

* [In February, 1889, the Zoological Society of London received living specimens of this Lark, believed to have been obtained in the same district. See P. Z. S. 1889, p. 26.—EDD.]

other towns in the north of the Regency. I am told, however, that it does not breed in the far south, occurring there only on passage. I may here observe that I cannot hear of any of the Swifts wintering anywhere in the Regency.

23. *CYPSELUS PALLIDUS*. (Dresser, B. of Europe, iv. p. 597.)

Mr. Aplin met with this species also at El Djem on the 20th April, when he secured a specimen, and he fell in with it again a few days later at Kairouan, but no further inland. At El Djem it was fairly plentiful, hawking for insects over the old Roman Amphitheatre, and at Kairouan it simply swarmed, being the common Swift of the place, and far outnumbering *C. apus*, which was also present, as were also one or two White-rumped Swifts, all circling round and about the Great Mosque of Sidi-Okba. *C. pallidus* and *C. apus* no doubt breed at both these places. Mr. Aplin apparently had no difficulty in distinguishing one species from the other, when on the wing in company. The note or cry of *C. pallidus* also seemed to him different from that of *C. apus*.

I notice that Dr. Koenig found the present species in Algeria, at Bordj Saada near Biskra (J. f. O. 1895, p. 184).

24. *DENDROCOPUS NUMIDICUS*. (Cat. B. Brit. Mus. xviii. p. 217.)

Not at all uncommon in the high oak forests of Ghardimaou, at El Fedja, and in habits and alarm-note resembling *D. major*. Mr. Aplin thought he also once heard *D. minor* in these woods, but was not quite certain about it.

25. *GECINUS VAILLANTII*. (Cat. B. Brit. Mus. xviii. p. 41.)

Found in the same forests, but less numerous than the preceding species, and extremely shy and difficult to approach. The ringing-note of this bird resembles that of our species, and is not so deep in tone as that of *G. canus*.

26. *ALCEDO ISPIDA*.

Specimens were obtained both by Mr. Aplin and M. Blanc. The Kingfisher occurs both in the north and in the south of

the Regency, but is less common in the latter districts, owing to the want of water.

27. *CIRCUS ÆRUGINOSUS*.

I obtained a specimen of this Harrier last year, but omitted to include it in my list.

28. *PERNIS APIVORUS*.

M. Blanc sent me a specimen of the Honey Buzzard, which occurs as a regular migrant in Tunis.

29. *FALCO AQUATICUS*.

Only one specimen, obtained at the Source des Trois Palmiers.

30. *PERDIX PARVA*.

Also only one specimen, obtained at Gafsa.

31. *CURSORIUS GALLICUS*.

Met with on several occasions, notably at Bir Sultane and to the S.E. of the Chott Djerid, and again later on further north, on the road to Sfax. The birds were sometimes in pairs, at others in small flocks of six or seven individuals, and always on bare sand hillocks or semi-desert country. Their running powers are wonderful. On the wing their short tails and broad wings, with black underneath, give them a curious appearance. They sail a good deal on still wings, and sometimes twist about like a Lapwing. The note, uttered on the ground, is a short sharp "weet," also "weet-quoi."

32. *SQUATAROLA HELVETICA*.

A specimen of the Grey Plover was received from M. Blanc.

33. *TRINGA MINUTA*.

Specimens obtained near Ghardimaou.

34. *CALIDRIS ARENARIA*.

A specimen received from M. Blanc.

35. *STERNA FLUVIATILIS*.

Specimens from M. Blanc, both in adult and immature plumage.

36. *STERNA DOUGALLI* [?] *.

Specimens from M. Blanc, among them a beautiful adult male, perfectly white, with the exception of the black head and faint roseate tinge on the underparts. Both the Roseate and the Common Tern are plentiful in summer in the south of the Regency, and particularly on the island of Djerba, which is a favourite breeding-haunt of the Terns.

37. *HYDROCHELIDON NIGRA*.

Obtained last year, but omitted in my list.

VIII.—*Note on Anas erythrophthalma*, Wied.

By T. SALVADORI, C.M.Z.S.

ONE of the most obscure species among the Ducks is *Anas erythrophthalma*, Wied (Beitr. iv. p. 929), described from Villa de Belmonte, in Southern Brazil.

Of the two birds collected by Wied, the female was in good condition, but the male had the wings imperfect, having lost the quills. These two specimens, like the rest of Prince Max of Wied's collection, are now in the American Museum of Natural History in New York. They were examined many years ago by Mr. Salvin, who thought that perhaps they were to be referred to *Metopiana peposaca* (Ibis, 1874, p. 319). The same opinion was expressed two years later by Selater and Salvin in their excellent "Revision of the Neotropical Anatidæ" (P. Z. S. 1876, p. 399, note). But more recently, in 1889, Mr. Allen, in a paper on Wied's types (Bull. Am. Mus. N. H. ii. p. 269), has quite emphatically expressed the opinion that *A. erythrophthalma* is a very different bird from *Metopiana peposaca*.

This was the state of things when I undertook the preparation of the Catalogue of the Ducks in the British Museum. Naturally I made a point to settle the question.

Very soon I found that Dr. Hartlaub in 1844 (Verz. Ges. Mus. p. 119) had mentioned a specimen in the Bremen

* [We leave this as written, but Mr. Aplin, to whom Saunders has written on the subject, states that the only grey Tern he observed was *Sterna anglica*.—EDD.]

Museum under the name of *Anas erythrophthalma*. Having asked Dr. Hartlaub to give me some information about that specimen, he replied that unfortunately the specimen, in some unaccountable way, had disappeared from the Bremen Museum. Upon this I wrote to Mr. Allen on the subject; he kindly sent me a photograph of the two types, but this was not sufficient to enable me to make up my mind on the subject, and, as he most positively insisted on the bird being different from *M. peposaca*, I suggested to him to compare the specimens with the figure of *Fuligula nationi*, Sclat. & Salv. (P. Z. S. 1878, p. 477, pl. xxxii.), from Lima; and the reply was that he really thought they were one and the same species.

Most strangely, while I was studying the types of *Fuligula nationi*, I had found that they were very similar to specimens of *Nyroca brunnea*, Eyton, from South Africa; the resemblance was so great that there was scarcely any tangible difference, and Mr. Salvin suggested to me that they should be put together.

Wishing as far as possible to solve the difficult problem, I proposed to Mr. Allen to send the types of *Anas erythrophthalma* to London in order to make a direct comparison. This he kindly did, but the specimens arrived after my departure from London. Mr. Salvin, to whom the birds were addressed, having made the necessary comparison, wrote to me as follows:—

“The types of *Anas erythrophthalma*, Wied, are in old worn and faded plumage; the wings of the male are imperfect, the quills lost, and the speculum not visible on any of the remaining feathers.” (This was the state in which Wied described the male bird.) “The most nearly allied species are *Nyroca brunnea*, Eyton, and *Nyroca nationi*, and from these the male hardly differs in plumage, inclining rather to *N. brunnea* in colour than to *N. nationi*. The sides of the head and upper neck are rather lighter and redder, but this may be due to fading. The bill and legs are now of a pale yellowish brown; in both *N. brunnea* and *N. nationi* they are quite dark. In size the bill agrees very nearly with *N. brunnea*, but is perhaps slightly higher at the base.

“The *female* agrees very closely with that of *Nyroca brunnea*. The distribution of white on the face and throat is similar in the two birds, but less in extent in *A. erythrophthalma*. The whole plumage, especially the under surface, is more ferruginous, as is often the case in some specimens of Anatidæ. As in the male, the bill and legs are *now* pale. The two birds are of the same size, the wing in each case measuring about 8 inches.”

The principal difference between the type specimens of *A. erythrophthalma* and *N. brunnea* and *N. nationi* is the present pale colour of the bill and legs of the first, which no doubt is due to fading, as we learn from Wied's description that the *bill was plumbeous like the legs*.

After all this it seems extremely likely that the Brazilian *N. erythrophthalma* (Wied), the Peruvian *N. nationi*, and the African *N. brunnea* are one and the same species (which will have to stand under the name of *N. erythrophthalma*), common to South America and South Africa. The case would be similar to that of *Dendrocygna viduata* and *D. fulva*, which are also found on both these continents, the latter species extending even to India. Possibly *Nyroca erythrophthalma* is only a straggler to South America, unless we are to believe that the Ducks found very common near Arica and Mollendo by Mr. MacFarlane (*Ibis*, 1887, p. 203) really belong to *N. erythrophthalma*.

Turin, Zoological Museum, November 1895.

IX.—On the Birds of the Philippine Islands.—Part VI.*
The Vicinity of Cape Engaño, N.E. Luzon, Manila Bay, and Fuga Island, Babuyan Group. By W. R. OGILVIE GRANT. *With Field-Notes by JOHN WHITEHEAD.*

(Plate III.)

ON the 6th April, 1895, our indefatigable friend, Mr. Whitehead, started off once more for the north of Luzon, his

* For Part I. see *Ibis*, 1894, pp. 406–411; Part II. *ibid.* pp. 501–522; Part III. *Ibis*, 1895, pp. 106–117; Part IV. *ibid.* pp. 249–267; Part V. *ibid.* pp. 433–472.

destination this time being Cape Engaño, the extreme north-east point of the Island. From thence he hoped to reach the ranges of mountains that run parallel with the east coast, but the impossibility of obtaining either Negrito porters or boats proved a serious obstacle. Having arrived safely at Aparri, where he was obliged to remain for some days, as it was "semana santa" (holy week), he managed to charter a large coasting-boat to take him on to Cape Engaño. The start was made on a Monday night, but a contrary wind drove the boat in a northerly direction far out of its course, and for a couple of days she was obliged to seek shelter under Fuga Island, one of the Babuyan group. Here Mr. Whitehead landed, and, though the time at his disposal was very limited, several interesting birds were collected, the most important being examples of a new species of Bulbul (*Hypsipetes fugensis*), which finds its nearest ally in the Loo Choo Islands. The boat having been only chartered to put him down at Engaño, he was obliged to move when the Indian captain thought fit, and, the wind becoming favourable, arrived at his destination two days later. The Cape proved somewhat of a disappointment, for, owing to the want of boats and porters, he was unable to reach the east coast. The Negrito tribes which inhabit that part of Luzon never do any baggage-carrying, so a move to any great distance was out of the question, and, to add to other troubles, the weather was miserably wet, rain falling for three or four days on end. By making a couple of trips in a canoe, which he managed to procure, a small quantity of baggage was taken up a neighbouring river; but, all the Negritos having run away, he found it impossible to proceed further, and during the ten days he spent in the forest not a native was to be seen. As it was impossible to remain longer where he was, he returned to the Cape, and, taking advantage of a large coasting-boat belonging to a Spaniard, sent one of his men back to Aparri with a view to obtaining a boat and returning to the Babuyan group. This boat was wrecked in the same typhoon which swamped one of the coasting-steamers and drowned nearly two hundred people.

Mr. Whitehead's servant, however, had better luck and escaped with his life, but his mission was not attended with success, for, the natives being scared by the recent disaster, not a boat was to be hired, even for \$100 per month, and he returned to Cape Engaño. It was a long time before there was another chance of returning to Aparri, and for ten days Mr. Whitehead and his men had to wait camped out on the shore to the south of the Cape.

During all this time many interesting birds were collected, including examples of three new species—a beautiful blue Flycatcher (*Siphia enganensis*), with white abdomen and ferruginous flanks, most nearly allied to an Indian species; a green-backed Tailor-bird (*Orthotomus chloronotus*), and, more interesting still, a third new species of the new genus *Zosterornis*. Two of these new forms are well shown in the accompanying Plate (III.), the Golden-capped Babbler (*Z. dennistouni*) being especially beautiful and attractive. During this expedition a number of birds were obtained which Mr. Whitehead had not met with previously, and we have no doubt that, should he succeed at some future time in exploring the eastern chain of mountains, many novelties will be discovered. There still remains some good unexplored ground to the south of Luzon which should also be well worth visiting. Meanwhile our friend, hoping to escape from an unusually wet season in Manila, departed to Samar, whence we hear a rumour of a fine collection on its way home with specimens of several species which he believes to be undescribed.

A few mammalia and reptiles were sent from Cape Engaño, and among them a pair of the great rat (*Phlæomys cumingi*) and examples of a new species of frog.

A small collection of Hymenoptera sent from Engaño has been worked out by Col. Bingham and contains specimens of no less than seven new species, one being a remarkably large form of the handsome genus *Scolia*, which has been called *S. whiteheadi*. This paper has been published in the 'Annals and Magazine of Natural History' (1895, xvi. pp. 438-446). We have also been promised reports on the Arthropoda and Diptera collected during this and former expeditions.

Many fine Hemiptera remain still unexamined, and it is to be hoped that ere long some one may be found able and willing to examine and report on them.

1. *ASTUR SOLOENSIS* (Lath.) ; Sharpe, Cat. B. Brit. Mus. i. p. 114, pl. iv. fig. 1 (1874).

A male of Horsfield's Short-toed Goshawk was obtained in the neighbourhood of Cape Engaño ; it is a nearly adult bird, but the flanks and outer tail-feathers are barred, and there are a few barred feathers on the middle of the lower breast.

2. *ACCIPITER GULARIS* (Temm. & Schleg.) ; Seebohm, B. Japanese Emp. p. 205 (1890).

Astur (Nisus) gularis, Temm. & Schleg. Fauna Japon., Aves, p. 5, pl. ii. [♂ & ♀ ad.] (1845).

Accipiter nisoides, Blyth, J. As. Soc. Beng. xvi. p. 727 (1847) ; Gurney, List Diurn. B. of Prey, App. O, p. 165 (1884).

Accipiter stevensoni, Gurney, Ibis, 1863, p. 447, pl. xi. [♂].

Mr. Whitehead procured a fine adult female of this Sparrow-Hawk on the island of Fuga. The identification of this specimen has led me to make a very careful examination of the large series of specimens of so-called *Accipiter virgatus* now forming part of the British Museum collection. Being anxious to arrive at an independent opinion on the somewhat intricate question as to whether all the birds included under this name were really all local forms of one and the same species, I measured and examined all the adult and many of the immature examples before looking up what had been written on this subject since the publication of Dr. Sharpe's standard work (Cat. Birds, vol. i.) in 1874. I now find that the conclusions at which I have arrived are practically those already published by Gurney ('List of Diurnal Birds of Prey,' App. O, pp. 165-177, 1884). On certain minor points I should, however, like to offer some remarks and to make a few corrections, more especially as the number of specimens has enormously increased, thanks to the magnificent donations received during the last ten years.

Under the synonymy of Dr. Sharpe's *Accipiter virgatus*, we find *A. gularis* (Temm. & Schl.), *A. nisoides*, Blyth, and *A. stevensoni*, Gurney, and though these names, no doubt synonymous *inter se*, belong to a species which is certainly very distinct from the typical *A. virgatus*, Temm., it must be borne in mind that when vol. i. of the 'Catalogue of Birds' was written the material available was poor enough, very different from the grand series of skins to be seen at the present time.

A. gularis really belongs to a perfectly distinct group from *A. virgatus*, Temm., and its allied forms, and is much more closely allied to *A. nisus*, having the barring on the underparts of the female *continued up to the throat*, while in the females of the *A. virgatus* group the chest is, on the whole, *longitudinally* marked and blotched, or nearly uniform in colour, in contrast to the barred breast and underparts. Again, in the female of *A. gularis* the ashy black line down the middle of the white throat, formed by the marking on the middle line of feathers, is very narrow and confined to the shafts, while in *A. virgatus* the median band is much wider and more strongly marked. Lastly we may note the difference in the shape of the wing, which, though mentioned by Schlegel (Mus. Pays-Bas, ii., *Astures*, pp. 32-33, 1862), has been overlooked by subsequent writers. In *A. gularis* the fourth primary quill, forming the angle of the wing, is *considerably longer* than the fifth, while in *A. virgatus* and its allied forms the fourth quill is only slightly longer than the fifth. This difference appears to be constant in birds with fully-developed quills.

A. gularis may thus be briefly described as follows; the list of measurements is taken from specimens in the British Museum collection:—

♀ *adult*. Like *A. nisus*, being barred transversely *up to the throat*, which is white, with a more or less well-marked dark line down the middle, formed by the *very narrow* black or greyish-black shaft-stripes to the feathers. Fourth primary quill longest and *considerably longer* than the fifth.

	Wing. in.	Tail. in.	Tarsus. in.	<i>Barring on the underparts.</i>
[♀ ad.] Sumatra	7·4	5·5	2·05	Reddish brown.
[♀ nr. ad.] Java	7·3	5·0	2·0	"
♀ ad. Labuan	7·5	5·4	2·05	Dark brownish.
♀ ad. Kina Balu	7·2	5·4	1·95	"
♀ ad. Zamboanga	7·5	5·3	2·0	" , tinged with rufous.
♀ ad. Fuga I.	7·3	5·4	2·0	Dark brownish.
[♀ ad.] Yokohama	7·35	5·4	2·1	"
[♀ nr. ad.] Fokien	7·45	5·6	2·0	Reddish brown.
♀ nr. ad. Shanghai	7·5	5·5	2·05	"
♀ ad. Shanghai	7·5	5·3	2·0	"
[♀ ad.] Malacca	7·5	5·5	1·95	Rufous.
[♀ ad.] Malacca	7·5	5·5	2·05	"
[♀ ad.] Malacca	7·5	5·6	1·95	"

♂ *adult*. Throat white, the line of feathers down the middle with black shafts, forming a *very narrow* black central line, absent in the most adult examples. The fourth primary quill longest, and *considerably longer* than the fifth.

	Wing. in.	Tail. in.	Tarsus. in.	<i>General colour of the chest and breast.</i>
♂ ad. Sumatra	6·3	4·5	1·75	Pale rufous.
♂ ad. Sumatra	6·4	4·6	1·8	Very pale rufous buff.
♂ nr. ad. Timor	6·2	4·7	1·8	Rufous.
♂ imm. Palawan	6·3	4·5	1·75	(Adult feathers light red.)
♂ ad. Japan	6·6	4·7	1·75	Pale grey, tinged with rufous.
♂ ad. Japan	6·4	4·6	1·8	Pale rufous, with less grey than in the last specimen.
5 ♂ ad. Chefoo	6·4-6·6	4·5-4·7	1·8-1·85	Pale rufous.
♂. Coast of China, near Saddle I.	6·6	4·5	1·8	Pale greyish rufous.
♂. Cochin China	6·5	4·7	1·8	Bright rufous chestnut.
2 [♂]. Malacca	6·2-6·6	4·5-4·7	1·6-1·75	" "
2 [♂]. Malacca	6·4-6·5	4·5-4·6	1·75-1·85	Pale rufous buff.

As will be seen from these notes, the barring on the underparts of the females varies considerably in colour—specimens from Malacca, Sumatra, Java, and China being more rufous, those from Borneo, the Philippines, and Fuga Island dark brown.

The colour of the chest and breast in the male also varies much. The majority of adult males have these parts pale rufous or rufous buff, but some, such as the examples from Cochin China and Timor and two birds from Malacca, are bright rufous, while two examples from Japan are unusually pale, one being pale grey with merely a tinge of rufous.

I am unable at present to offer an opinion as to the cause of these differences, but they may be individual and due to food and condition.

The type of *Accipiter virgatus*, Temm., is said to have come from Java, but the British Museum collection has no examples from that island. Temminck's figure (Pl. Col. i. pl. 98 [no. 109], 1824) shows that his bird has the wide dark stripe down the middle of the throat, and both the description and figure agree closely with males from Southern India and Ceylon.

The large Himalayan form (which is also met with in Formosa) is called *Accipiter affinis*, Hodgson, by Gurney, and may certainly be considered subspecifically distinct from typical *A. virgatus*, on account of its larger size, browner and much less uniform chest, even in the most adult females.

It may be briefly described:—

Adult female. Above dark brown, sometimes with a distinct greyish gloss on the mantle; throat white, a line of feathers down the middle, with *wide* dark ashy-black shaft-stripes; chest mostly reddish brown, often mixed with dusky and edged with white on the sides of the feathers, the general appearance of the markings being *longitudinal*, in marked contrast to the breast and rest of the underparts, which are reddish brown widely barred with white; the under surface of the inner webs of the quills white.

	Wing. in.	Tail. in.	Tarsus. in.
Average measurements of various birds ranging from Dehra Dhoon to Assam	8.0-8.3	6.7-7.1	2.15-2.2
From Formosa (Seeböhm Coll.)	8.0-8.15	6.6-6.8	2.2
From Formosa (Norwich Mus.)	8.7	—	2.2 (<i>ex</i> Gurney)

Adult male. Closely resembles, as regards size and the colour of the underparts, the *female* of the smaller insular form, *A. manillensis*, Meyen, but may be generally recognized by the dark slate-grey colour of the upper parts.

	Wing. in.	Tail. in.	Tarsus. in.
Average measurements of various birds from the Himalayas and Pegu. .	6.5-6.7	5.0-5.5	2.0
From Formosa	6.9-7.1	5.5-5.6	2.1

In 'Stray Feathers,' vol. ix. p. 231, Hume gives the following wing-measurements of Himalayan examples which he wrongly refers to *A. gularis*, T. & S.:—

	in.	in.
Nine males	7.60	to 7.80
Eight females	8.00	to 8.20

The measurements of the males are obviously a mistake, and should read—

	in.	in.
Nine males	6.60	to 6.80

It will be further noted that the Himalayan males are *not* larger than Formosan males (*cf.* Gurney, List, App. O, p. 170), just the reverse, but Gurney was misled by Hume's mistake.

The wing-measurement (8.7) of the female from Formosa in the Norwich Museum is probably individual if correctly

given, for the three female examples of which the measurements are given above are the same size as Himalayan examples. I feel confident also that Hume is mistaken in stating that the true *A. virgatus* occurs in the Himalayas as well as *A. affinis* (which he calls *A. gularis*); the male from Darjeeling, with a wing-measurement of 6·9 inches, of course belongs to the large race.

Accipiter manillensis is also, I think, subspecifically distinct from typical *A. virgatus*, and Mr. Whitehead having, in addition to the Museum series, now obtained three adult females, we have a fair number of skins for comparison.

Adult female. Differs from the female of *A. virgatus* in having the chest, breast, and sides nearly *uniform light red* in the most adult birds, while in somewhat younger examples the middle of the breast shows distinct cross-bars of reddish brown and white; the under surface on the quills washed with rufous.

Wing 6·9–7·0 inches, tail 5·4–5·5, tarsus 2·05–2·1.

Adult male. Like the male of *A. virgatus*.

Wing 6·0–6·1 inches, tail 4·8–4·9, tarsus 2·0.

Adult examples of the typical *A. virgatus* are comparatively poorly represented in the Museum collection, and without more material it is impossible to form definite conclusions as to the relationship between the birds from Southern India, Ceylon, the Andaman Islands, Java, and the Philippines. An adult female from the Andamans closely approaches *A. manillensis*, having a great deal of uniform rufous colouring on the sides of the chest and breast. This bird measures:—

Wing 7·2 inches, tail 5·7, tarsus 2·0.

It may be that *A. manillensis* is not even subspecifically distinct from typical *A. virgatus*.

The smallest representative form of this group, characterized by the wide black throat-stripe, is *Accipiter rufotibialis*, Sharpe, from Kina Balu, North Borneo, distinguished by its uniform rufous-chestnut tarsi.

Wing 5·85–5·9 inches, tail 4·5–4·6, tarsus 1·8.

3. *SPIZAËTUS PHILIPPENSIS*, Gurney; Grant, *Ibis*, 1894, p. 503.

A fine male example of this rare bird, the Philippine Hawk-Eagle, from Cape Engaño.

4. *SPILORNIS HOLOSPILUS* (Vig.) ; Grant, *Ibis*, 1895, p. 251.

An adult female of this fine Serpent-Eagle came in the second half of the Lepanto collection, but arrived too late to be added to my last list in the October 'Ibis,' 1895.

From Cape Engaño we have received an immature female, which has the head and upper mantle whitish buff, with brown shaft-spots; there is the beginning of a short *deep black* superciliary band extending above the eye, while a few feathers of a more adult plumage are beginning to make their appearance on the occiput; these are brownish red, with a wide subterminal black tip. (The appearance of this black eyebrow-stripe is very puzzling, as it does not appear in the adult plumage; it may be part of an intermediate plumage or fade with age and wear to the dark brown of the adult.) General colour above brown, with irregular, ill-defined reddish-white spots on either web; tail dark brown, with two wide brownish-white bands across the terminal half; chin and throat whitish buff; sides of the head and underparts pale buff, with brownish-red shaft-stripes, widest on the terminal half; thighs buff, with wide chestnut middles, constricted at intervals, so as to form ill-defined buff spots down the sides of the feathers, one or two half-grown *adult* feathers on the left thigh.

Wing 15·2 inches, tail 10·7, tarsus 3·4.

Although somewhat peculiar in plumage and large in size, I have no hesitation in referring this specimen to *S. holospilus*, and Mr. Whitehead shares the same opinion.

5. *NINOX PHILIPPENSIS*, Bonap.; Grant, *Ibis*, 1895, p. 441.

The Philippine Hawk-Owl was again found in the neighbourhood of Cape Engaño, where several adult birds and an immature female were collected.

The *immature female* differs from the adult in having the

underparts nearly uniform tawny buff, only some of the feathers of the upper breast tipped with dull rufous-brown, and the white markings on the upper parts, especially those on the greater coverts, larger and better defined.

6. NINOX JAPONICA (Temm. & Schl.).

Strix hirsuta japonica, Temm. & Schl. Fauna Japonica, Aves, p. 28, pl. 93 (1845).

A male of the Japanese Hawk-Owl was obtained on the island of Fuga. It differs from the typical *N. japonica* from Japan and the Loo Choo Islands in having the predominating colour of the underparts white instead of reddish brown, all the feathers being white, with an oblong reddish-brown spot, about 0.6 of an inch long, at the end of each. Examples from Luzon and Mindanao, however, approach the Fuga-Island bird, having less reddish brown and more white on the underparts.

N. japonica appears to be perfectly distinct from the Indian *N. scutulata*, the markings on the sides and flanks in the latter species taking the form of wide bars with a detached heart-shaped spot or bar at the tip of each feather. The sides and flanks thus appear spotted, not longitudinally streaked, as in *N. japonica*.

7. ORIOLUS CHINENSIS, Linn. ; Grant, Ibis, 1895, p. 252.

An adult female of the Chinese Oriole from Fuga Island.

8. DICRURUS BALICASSIUS (Linn.) ; Grant, Ibis, 1895, p. 441.

Both sexes of the Crow-billed Drongo from the vicinity of Cape Engaño.

9. HYPOTHYMIS AZUREA (Bodd.) ; Grant, Ibis, 1895, p. 442.

The Black-naped Flycatcher from the vicinity of Cape Engaño.

10. RHIPIDURA CYANICEPS (Cassin) ; Grant, Ibis, 1895, p. 252.

Mr. Whitehead sends an adult female and nest of the Blue-headed Fan-tailed Flycatcher. The nest is of the ordi-

nary form of *Rhipidura*, cup-shaped, composed of fine dry fibres, and finished off on the outside with a thin covering of spiders' webs, the whole structure being placed on a narrow horizontal branch.

11. *ZEOCEPHUS RUFUS* (G. R. Gray); Sharpe, Cat. B. Brit. Mus. iv. p. 343 (1879).

A fine series of this beautiful bright chestnut Flycatcher was obtained in the neighbourhood of Cape Engaño. In fully adult males the tail is much in excess of the measurement given by Sharpe (*op. cit.*); instead of 3.95 inches the tail measures 6.45 in the finest specimen, and in several specimens the longest feathers are between 5 and 6 inches long. It is the middle pair of feathers that are produced, far surpassing the second pair in length. The genus *Zeocephus* must therefore be transferred to section *l''* of Sharpe's key, "Tail with elongated centre tail-feathers, &c.," which includes the Paradise Flycatchers (*Terpsiphone*).

12. *CRYPTOLOPHA OLIVACEA* (Moseley); Bourns & Worcester, Occ. Pap. Minnesota Acad. i. no. 1, p. 39 (1894).

Abrornis olivacea, Moseley, Ibis, 1891, p. 47, pl. ii. fig. 2.

A single male specimen of the Olive Flycatcher-Warbler was obtained in the neighbourhood of Cape Engaño. It has hitherto been recorded from the islands of Samar and Negros (*Moseley*), and also from Mindanao, Sulu, and Tawi Tawi (*Bourns & Worcester*), but this is the first time it has been met with in Luzon. The types of this species are in the British Museum collection, and are quite similar to the Engaño bird.

13. *SIPHIA PHILIPPINENSIS* (Sharpe); Grant, Ibis, 1895, p. 443.

Another male of the Philippine Red-breasted Flycatcher from Engaño.

14. *SIPHIA ENGANENSIS*, Grant, Bull. B. O. C. no. xxix. p. ii (1895).

The Engaño Flycatcher is interesting as finding its nearest

ally in the Indian *Siphia pallidipes* (Jerd.). Both sexes are, however, easily distinguished by the following characters:—

Adult male. Like the male of *S. pallidipes*, but the sides and flanks are fawn-coloured instead of pure white.

Adult female. Even more different from the female of *S. pallidipes*:—the lores are rust-coloured instead of white, and a short superciliary band of the same colour reaches as far as the eye, above this there is a line of pale blue feathers, confluent across the forehead; the basal part of the outer webs of the tail-feathers washed with pale blue instead of reddish chestnut. Sides of the face dark brown, shading gradually into the rust-coloured throat, whereas in the female of *S. pallidipes* the sides of the head are grey, and sharply defined from the bright rust-coloured throat.

Adult male. Total length 6·0 inches, culmen 0·7, wing 3·1, tail 2·5*, tarsus 0·85.

Adult female. Total length 5·3 inches, culmen 0·65, wing 2·9, tail 2·15, tarsus 0·73.

15. PHYLLOSCOPUS BOREALIS (Blas.); Grant, Ibis, 1895, p. 443.

A male of the Arctic Willow-Warbler was collected at Cape Engaño. Exposed part of bastard-primary 0·45 inch; 3rd primary longest; 2nd intermediate in length between 5th and 6th; 3rd, 4th, and 5th primaries emarginate on the outer web; length of wing 2·7 inches.

16. HYPSSIPETES FUGENSIS, Grant, Bull. B. O. C. no. xxix. p. ii (1895).

The Red-eared Bulbul from Fuga Island adds a fourth species to the brown-plumaged section of the genus *Hypsipetes*, of which *H. amaurotis* (Temm.) from Japan is typical, while *H. squamiceps* (Kittl.) inhabits the island of Bonin, and *H. pryeri*, Stejneger, has more recently been described from the Loo Choo Islands.

Adult male and female. Most nearly allied to *H. squamiceps* and *H. pryeri*, having the chestnut ear-coverts united by a

* Wrongly printed as 2·1, Bull. B. O. C. no. xxix. p. ii.

band of the same colour extending across the throat, but the top of the head, which is almost devoid of a crest, and the neck are *brown, like the back*, instead of dark slate-grey; and the white tips to the feathers of the breast and belly are almost entirely absent, or only faintly indicated along the middle line of the underparts. Total length 10·5 inches, culmen 1·15, wing 4·85, tail 4·65, tarsus 0·85.

Habitat. Fuga Island, Babuyan Group.

Since vol. vi. of the 'Catalogue of Birds' appeared in 1881 two examples of a *Hypsipetes* from the island of Chusan have been added to the national collection.

Dr. Stejneger (P. U.S. Nat. Mus. ix. p. 643, 1886), after describing *H. pryeri*, goes on to say, "a specimen from Chusan, China (U. S. Nat. Mus. no. 85685), acquired by Mr. Jouy at the Shanghai Museum, differs in no essential from the typical Japanese *H. amaurotis*."

Though the two British Museum specimens from Chusan at first sight seem rather different from Japanese examples of *H. amaurotis*, I am satisfied that this is partly due to the somewhat soiled condition of the underparts in both. There is a distinct indication of the reddish-brown collar across the throat, but this is often nearly as much developed in typical birds from Japan. There seems to be no doubt that *H. amaurotis* is partly migratory, as the species is recorded as found during the winter months in Korea, and we have examined examples from Chusan, Ningpo, and the Loo Choo Islands; but *H. squamiceps*, *H. pryeri*, and *H. fugensis* are apparently resident forms which do not migrate. Although *H. squamiceps* and *H. pryeri* closely resemble one another in plumage, they are perfectly distinct, the Bonin bird being not only much larger, but having the bill and, as Dr. Stejneger points out, the tarsus longer in proportion. In all these species the males are, on the whole, distinctly larger than the females, a point which is not apparent from the wing-measurements given by Mr. Seebohm. He kindly allowed me to look over his fine collection of *Hypsipetes*, and these, added to the British Museum specimens, make an exceptionally fine and complete series from the Bonin

and Loo Choo Islands, Japan, and other localities. Of these I add a table of measurements (see p. 115), the sex, where recorded by the collector, being placed in brackets.

17. *POLIOLOPHUS UROSTICTUS* (Salvad.) ; Grant, *Ibis*, 1895, p. 253.

Several males and females of the Wattled Brown Bulbul from Engaño.

18. *IRENA CYANOGAстра*, Vigors; Sharpe, *Cat. B. Brit. Mus.* vi. p. 175 (1881).

The Luzon Fairy Blue-bird was obtained by Mr. Whitehead for the first time in the neighbourhood of Cape Engaño.

The plumage of the male, contrary to the statement of Dr. Meyer, differs slightly from that of the female in having the black on the chest more extended and deeper in colour. In the female the throat and fore neck are not such deep black and slightly glossed with purple, while the band of purplish-blue feathers across the chest which succeeds the black neck is deeper in colour than the rest of the underparts.

19. *CITTOCINCLA LUZONIENSIS* (Kittl.) ; Grant, *Ibis*, 1895, p. 447.

Mr. Whitehead now sends additional specimens of the Philippine Shama from Engaño, collected in the end of April and the beginning of May. The males are perfectly typical, but all the three females are unusually dark in plumage, though no doubt this is partly accounted for by their somewhat worn condition. The crown of the head is very dark chocolate-brown, tinged with rufous in all three, and in one bird the mantle and back are nearly black, each feather being tinged with brown, and the fore neck and chest are blackish, while in the other two specimens the back is blackish brown, each feather margined with deep chocolate-brown; the feathers of the throat and fore neck, as well as the sides of the head, are greyish black. The whole appearance of these birds conveys the impression that they are young males attaining their adult plumage. I cannot see that it is possible for the ordinary female (described '*Ibis*,' 1895, p. 447), even in very worn plumage, to become so black on the back and



J. G. Keulemans del. et lith.

Mintern Bros. imp.

1. ORTHOTOMUS CHLORONOTUS.
2. ZOSTERORNIS DENNISTOUNI.

chest, for the basal part of her feathers in autumn plumage is greyish, not black. It seems just possible that a mistake may have been made in ascertaining the sex.

20. *COPSYCHUS MINDANENSIS* (Gm.) ; Grant, Ibis, 1895, p. 448.

A pair of the Philippine Magpie-Robin from Engaño.

21. *ORTHOTOMUS CHLORONOTUS*. (Plate III. fig. 1.)

Orthotomus chloronotus, Grant, Bull. B. O. C. no. xxix. p. ii (1895).

Only a single example of the Green-backed Tailor-bird was obtained, in the neighbourhood of Cape Engaño.

As already remarked, it is easily distinguished from its nearest ally, *O. derbianus*, from having the back and upper parts, as well as the under tail-coverts, uniform olive-green. In the colour of the upper parts it resembles the smaller *O. atrigularis*, Temm., from Burmah and the Malay Peninsula, but among other differences the latter may be distinguished at a glance by the tail being olive-green instead of rufous brown.

Adult male. Top and sides of the head, including the eye, dull chestnut ; back and wing-coverts olive-green, quills dark brown edged with olive-green on the outer web ; cheeks, ear-coverts, and underparts grey, with white middles to the feathers, less conspicuous on the flanks, which are tinged with olive ; thighs chestnut ; under tail-coverts olive-green ; tail-feathers rufous brown, edged on the outer web with yellowish olive-green. Total length 4·8 inches, culmen 0·75, wing 2·2, tail 1·8, tarsus 0·8.

22. *CISTICOLA EXILIS* (Vig. & Horsf.) ; Sharpe, Cat. B. Brit. Mus. vii. p. 269 (1883).

The Red-headed Fantail-Warbler was obtained at Laguna de Manila in April. It is in full summer-plumage, with the crown and nape chestnut, shading into dull rufous brown on the hind neck ; chin, throat, and underparts ferruginous. Our bird agrees exactly with *C. erythrocephala* from Southern India (Oates, Faun. Brit. Ind., Birds, i. p. 371). I am very doubtful whether it is correct to call the Philippine bird *C. exilis* ; it

appears to differ from the typical Australian examples in several particulars, and, if it is not identical with Southern Indian birds (I think it is), may have to stand as *C. semi-rufa*, Cabanis (J. f. O. 1866, p. 10, & 1872, p. 316), the type of which comes from Luzon.

23. *ZOSTERORNIS STRIATUS*, Grant, Ibis, 1895, p. 110, pl. iv. fig. 1.

The Striped Silver-eyed Babbler was again met with in the mountains in the vicinity of Cape Engaño, and does not differ in any particular from the types.

24. *ZOSTERORNIS DENNISTOUNI*. (Plate III. fig. 2.)

Zosterornis dennistouni, Grant, Bull. B. O. C. no. xxix. p. ii (1895).

It is very interesting that a third new species of this new genus should have been discovered in Luzon. The new form from the neighbourhood of Cape Engaño agrees with *Z. whiteheadi* and *Z. striatus* in all particulars, except that the ring of plumes surrounding the eye is pale yellow instead of white, so the generic characters must be modified accordingly.

I have much pleasure in naming this beautiful Golden-headed Babbler in honour of Mr. John Dennistoun, one of those who have taken such a kindly interest in the success of Mr. Whitehead's expedition.

As in the other species of the genus, the male and female are perfectly similar in plumage.

Adult male and female. Forehead and crown shining golden yellow, shading into yellowish grey on the back and sides of the head and neck, and greenish grey on the back and rest of the upper parts, all the feathers with narrow whitish shaft-stripes; wings dark brown, the quills margined with yellowish brown. Chin and throat golden yellow, but paler than the crown, and shading into whitish yellow on the breast and rest of underparts, sides and flanks washed with greenish grey. Tail-feathers brownish black, margined on the outer webs with yellowish brown, the five outer pairs tipped with

white, the tips increasing in width towards the outer pair, which has also the greater part of the outer web white.

	Total length.	Culmen.	Wing.	Tail.	Tarsus.
	in.	in.	in.	in.	in.
Male	5.5	0.7	2.7	2.4	0.75
Female	5.3	0.7	2.6	2.2	0.75

Immature birds resemble the adult, but the golden-yellow forehead is represented by yellowish-brown feathers with pale middles, the quills are edged with rufous, and the underparts are white slightly tinged with yellow.

25. *PARUS SEMILARVATUS* (Salvad.) ; Grant, Ibis, 1895, p. 111.

A few additional specimens of the Black Titmouse from the neighbourhood of Cape Engaño include a young male bird with the belly brownish black, in which the white patch on the nape is very conspicuous, some of the feathers forming the patch being nearly pure white, with only a very narrow brownish-black margin. This white patch is also present in both the adult male and female, but hidden by the wider black tips to the feathers.

It is worth mentioning that the adult *female* differs from the adult male in having the underparts deep brown instead of shining black, for this sexual difference appears to have been hitherto overlooked.

26. *LANIUS LUCIONENSIS*, Linn. ; Grant, Ibis, 1894, p. 512.
An adult male of this Shrike from Engaño district.

27. *RHABDORNIS MYSTACALIS* (Temm.) ; Grant, Ibis, 1895, p. 450.

The Bridled Flower-creeper is apparently fairly common in the neighbourhood of Engaño. Several males were sent.

28. *DENDROPHILA MESOLEUCA*, Grant, Ibis, 1895, p. 450.

Two immature males of the White-backed Nuthatch from Engaño. We again observe scarcely a trace of the characteristic white stripes down the middle of the back, and the underparts are warm dull fulvous with some purplish gloss.

29. *CINNYRIS EXCELLENS*, Grant, *Ibis*, 1895, p. 255.

This lovely little Sun-bird is another species which was met with for the first time in the Albay district of South-east Luzon, as well as on the island of Catanduanes. Among the five birds sent from Cape Engaño is an adult female, and we now see that the type described was not so nearly adult as was supposed, for in the mature plumage there is a bright yellow patch down the middle of the lower breast and belly, similar in shape and position to the orange-red patch in the male. The rest of the plumage is similar to that of the type already described. The female of the allied form, *C. guimarasensis*, Steere, is described by Messrs. Bourns and Worcester as having the "entire breast bright orange-yellow, paler on the flanks, abdomen, and under tail-coverts."

30. *CINNYRIS WHITEHEADI*, Grant, *Ibis*, 1895, p. 451.

Whitehead's Sun-bird appears to be fairly common in the neighbourhood of Cape Engaño. Specimens of both sexes were obtained.

31. *ANTHOTHREPTES GRISEIGULARIS*, Tweed. ; Grant, *Ibis*, 1895, p. 451.

Several specimens of the rare Grey-throated Sun-bird from Engaño.

32. *ZOSTEROPS LUZONICA*, Grant, *Ibis*, 1895, p. 257.

The Luzon Yellow-breasted Silver-eye, first met with in the Albay district, was again procured near Cape Engaño, the birds from both localities being perfectly similar.

33. *DICÆUM RUBRIVENTER*, Less. ; Grant, *Ibis*, 1895, p. 453.

A male of this Red-bellied Flower-pecker from Engaño.

34. *DICÆUM XANTHOPYGIUM*, Tweedd. ; Grant, *Ibis*, 1895, p. 453.

A few males of the Yellow-rumped Flower-pecker from Engaño. These differ slightly from the birds sent in the Lepanto collection, being devoid of the dull olive-green fringes to the feathers of the nape and back of the neck which characterize the latter, which are, no doubt, freshly moulted.

35. *PITTA ATRICAPILLA*, Less. ; Grant, Ibis, 1895, p. 112.

The Philippine Black-headed Pitta has the plumage absolutely similar in the adult male and female ; a nearly adult male has a white spot on each side of the throat.

36. *PITTA ERYTHROGASTRA*, Temm. ; Selater, Cat. B. Brit. Mus. xiv. p. 432 (1888) ; Whitehead, Ibis, 1893, p. 504.

Nearly mature males of this Red-bellied Pitta were collected near Cape Engaño. Mr. Whitehead is of opinion (Ibis, 1893, p. 505) that *Pitta propinqua*, Sharpe, is not specifically distinct from the present species. The type of *P. propinqua* came from the island of Balabac, and since Mr. Whitehead examined the British Museum series we have obtained, through Mr. Everett, an adult male from the typical locality. This bird agrees perfectly with Dr. Sharpe's original description (Trans. Linn. Soc. (2) i. p. 330, 1877), and differs much from typical examples of *P. erythrogastra*. It must, however, be stated that both forms were found by Mr. Whitehead in the island of Palawan, one of his specimens being almost typical *P. propinqua*, and, given a larger series, we should probably find that the two forms pass more or less one into the other in Palawan. Still *P. propinqua* is a very well-marked insular form, and I consider Dr. Sharpe fully justified in regarding it as distinct. Both he and Dr. Selater are certainly mistaken, however, in regarding the "♂ juv. Dumalon, Mindanao," collected by Prof. Steere, as the young of *P. propinqua*, the Mindanao bird being typical *P. erythrogastra*.

37. *CAPRIMULGUS MANILLENSIS*, G. R. Gray ; Grant, Ibis, 1895, p. 462.

A male of the Manilla Nightjar from the vicinity of Cape Engaño has the ends of the outer pair of tail-feathers similarly coloured to those of the male mentioned in the last collection.

38. *BATRACHOSTOMUS MICRORHYNCHUS*, Grant, Ibis, 1895, p. 463.

Another male of the Luzon Frog-mouth has been forwarded from the Engaño district ; it is an interesting specimen in

the chestnut phase of plumage, the upper parts being like those of the female type described in the last collection, but the outer webs of the scapulars are pale buff, as in the dark-coloured male type, though the subterminal black spots are small, as in the female. The feathers of the throat and of the chest between the white bands are paler chestnut than in the female, and have white middles irregularly edged and barred with black. The belly, flanks, and under tail-coverts brownish white, with a few faint reddish-brown mottlings. In the wing-measurement given of the types of this species (Ibis, 1895, p. 463) I have just observed an unfortunate printer's error, which had escaped my notice, and might be misleading. The wing of *B. microrhynchus*, given as "5·52," should read 5-5·2. The measurements of the chestnut male are :—

Culmen.		Wing.	Tail.	Tarsus.
Length.	Width at gape.			
in.	in.	in.	in.	in.
0·85	1·25	5·15	4·1	0·7

As will be seen, the length and width of the culmen are slightly greater than in the types. There cannot be the slightest doubt that these three differently-plumaged birds all belong to one species, though Mr. Whithead was inclined to believe that the dark and rufous forms represented distinct species.

39. *EURYSTOMUS ORIENTALIS* (Linn.) ; Grant, Ibis, 1895, p. 114.

A female of the Broad-billed Roller from Cape Engaño.

40. *HALCYON COROMANDUS* (Lath.) ; Sharpe, Cat. B. Brit. Mus. xvii. p. 217 (1892).

A pair of this widely distributed Lilac-backed Kingfisher from the vicinity of Cape Engaño. The male has the underparts cinnamon, slightly paler on the belly, and the chest and upper breast are *conspicuously glossed with violet*. The female has the underparts altogether paler, especially on the middle of the belly, which is whitish buff, and there is no trace of lilac on the chest.

41. *HARPACTES ARDENS* (Temm.); Grant, Cat. B. Brit. Mus. xvii. p. 487 (1892).

Mr. Whitehead has sent home some splendid specimens of the Philippine Trogon, and among them two quite young examples, one being marked a male; both resemble the female adult, *only differing* in having the bars on the wing-coverts and secondaries coarser. Bill black, only the ridge and tip of the culmen yellowish.

42. *MICROSTICTUS FUNEBRIS* (Valenc.); Grant, Ibis, 1895, p. 262.

A very fine old male of this black Woodpecker from Engaño, with the sides of the head unusually bright deep carmine.

43. *IYNGIPICUS VALIDIROSTRIS*, Blyth; Grant, Ibis, 1895, p. 465.

A female of the Luzon Pigmy Woodpecker from Engaño.

44. *LEPIDOGRAMMUS CUMINGI* (Fraser); Grant, Ibis, 1895, p. 466.

Two females of the Curl-crested Cuckoo from Engaño. One, an immature bird, has the shining blue-black wax-like ends to the feathers of the crest and throat much narrower and more elongate than in the adult, and the white subterminal spots on the crest-feathers are absent.

45. *DASYLOPHUS SUPERCILIOSUS* (Cuv.); Grant, Ibis, 1895, p. 262.

A pair of the Crimson Eye-browed Cuckoo from Engaño.

46. *EUDYNAMYS*, sp. inc.

Mr. Whitehead obtained an adult male bird of this genus on the island of Fuga. It resembles the male of *E. mindanensis* (Linn.), but is considerably larger; unfortunately no female was obtained, so it is impossible to say whether the Fuga bird is distinct or not.

Comparative measurements:—

	Culmen. in.	Wing. in.	Tail. in.	Tarsus. in.
♂ from Fuga Is.	1·35	8·5	8·7	1·55
♂ from Luzon.	1·3	7·6	7·5	1·25
♂ from Mindanao ..	1·25	8·0	7·6	1·3

47. *BOLBOPSITTACUS LUNULATUS* (Scop.); Grant, *Ibis*, 1895, p. 467.

Additional male examples of the Luzon Collared Parrakeet from Engaño.

48. *LORICULUS PHILIPPENSIS* (P. L. S. Müll.); Grant, *Ibis*, 1895, p. 264.

A female of the Philippine Lorikeet from Engaño.

49. *PTILOPUS LECLANCHERI* (Bonap.); Grant, *Ibis*, 1895, p. 264.

This handsome Black-throated Fruit-Pigeon had previously been obtained by Mr. Whitehead only on the island of Catauduanes. We have now received several examples of both sexes from the vicinity of Cape Engaño, including the adult male and female and two young females, one somewhat larger than the other, but both nearly alike in plumage. They resemble the female adult, but the dark chin-spot is entirely absent, as well as the partially-defined deep chestnut band across the breast; the under tail-coverts are, moreover, paler cinnamon. Count Salvadori describes the pectoral band of both male and female as "dark purplish" (*cf.* Cat. B. Brit. Mus. xxi. p. 80, 1893). We can only conclude that his description must have been made in one of the numerous thick fogs prevalent during the time he was writing the Catalogue, for we know that our respected friend is not in any way colour-blind.

50. *CARPOPHAGA CHALYBURA*, Bonap.; Grant, *Ibis*, 1895, p. 264.

Further examples of Bonaparte's Philippine Fruit-Pigeon from Engaño district, with the dark purplish-grey band across the nape well defined.

51. *CARPOPHAGA NUCHALIS*, Cabanis; Grant, *Ibis*, 1895, p. 116.

Some fine examples of the Maroon-naped Fruit-Pigeon collected in the neighbourhood of Engaño are perfectly similar one to another and to those already sent from the province of Isabella, in the same neighbourhood.

A male from the island of Fuga is, however, rather puzzling, the patch on the nape being deep vinaceous grey, intermediate in colour between that of the present species and *C. chalybura*. The Fuga bird may be a distinct subspecies, but more material is required to settle this question.

52. *PTILOCOLPA CAROLA*, Bonap. ; Grant, Ibis, 1895, p. 117.

Both sexes of the Grey-breasted Fruit-Pigeon from Engaño. The immature female differs from the adult in having the breast and rest of the underparts grey, slightly washed with rufous, instead of chestnut, and the under tail-coverts pale cinnamon edged with grey, not uniform deep chestnut.

53. *CHALCOPHAPS INDICA* (Linn.) ; Grant, Ibis, 1895, p. 471.

A young example of the Indian Bronze-winged Dove from Engaño.

54. *PHLOGENAS LUZONICA* (Scop.) ; Salvadori, Cat. B. Brit. Mus. xxi. p. 585 (1893).

Beautiful examples of both sexes of the Blood-breasted Ground-Pigeon collected at Engaño are almost perfectly similar in plumage, but the female, *being a younger bird*, is almost devoid of the fine purple gloss on the feathers of the back and scapulars.

55. *MEGAPODIUS CUMINGI*, Dillwyn ; Grant, Cat. B. Brit. Mus. xxii. p. 449 (1893).

An adult female of Cuming's Megapode from Engaño and an immature male from Fuga Island.

56. *AMAUROSNIS OLIVACEA* (Meyen) ; Sharpe, Cat. B. Brit. Mus. xxiii. p. 153 (1894).

A somewhat immature female of the Philippine Crake has the chin and throat mixed with white. It is evident from the diagnosis of this species given by Dr. Sharpe in his Catalogue that the MS. containing the first part of the description has, by some accident, slipped out and been lost. We are thus led to believe that the whole plumage of the

male is *dark slaty grey*, but this, of course, really refers to the underparts only.

57. *ÆGIALITIS GEOFFROYI* (Wagl.).

Charadrius geoffroyi, Seebohm, Geogr. Distr. Charadr. p. 146 (1888).

Geoffroy's Sand-Plover from Engaño and Manila Bay in full breeding-plumage was obtained at the end of April and in the first week of May. The male has the bands from the lores to the ear-coverts, as well as the band between the eyes and its offshoot to the base of the culmen, deep black; but these markings are dark greyish in the female, and the latter, at least, not very clearly defined. In both the crown of the head, nape, and pectoral band are pale rufous chestnut, but brightest in the male.

58. *ÆGIALITIS MONGOLICA* (Pall.).

Charadrius mongolicus, Seebohm, Geogr. Distr. Charadr. p. 147 (1888).

Five adults in full breeding-plumage obtained at Manila Bay. If the sexes marked on the labels were correctly ascertained, the male and female are perfectly similar in plumage, but I have reason to believe that one of the specimens marked ♀ is really a ♂. I may here mention that the birds from Manila Bay were evidently not obtained by Mr. Whitehead himself, for he was at Cape Engaño at the time when they were collected.

59. *ÆGIALITIS PERONI* (S. Müll.).

Charadrius peroni, Seebohm, Geogr. Distr. Charadr. p. 166 (1888).

An adult male and nestling of the Malay Sand-Plover collected at Cape Engaño.

60. *STREPSILAS INTERPRES* (Linn.); Seebohm, Geogr. Distr. Charadr. p. 410 (1888).

A pair of Turnstones were shot at Cape Engaño.

61. *TOTANUS BREVIPES*, Vieill.

Totanus incanus brevipes, Seebohm, Geogr. Distr. Charadr. p. 361 (1888).

A female of the Asiatic Wandering Tattler from Manila Bay.

62. *TRINGA SUBARQUATA* (Güldenstädt); Seebohm, Geogr. Distr. Charadr. p. 419 (1888).

A male Curlew Sandpiper from Cape Engaño, in fullest breeding-plumage, was shot on the 18th May.

63. *TRINGA RUFICOLLIS*, Pallas.

Tringa minuta ruficollis, Seebohm, Geogr. Distr. Charadr. p. 437 (1888).

Two females of the Red-throated Stint from Manila Bay in full breeding-plumage.

64. *ESACUS MAGNIROSTRIS*, Geoffr. St.-Hil.

Ædicnemus magnirostris, Seebohm, Geogr. Distr. Charadr. p. 89 (1888).

A fine adult male of the Austro-Malayan Stone Curlew from Engaño.

65. *NYCTICORAX MANILLENSIS*, Vigors; Grant, Ibis, 1895, p. 266.

An immature female of the Manila Night-Heron, with streaked underparts and buff-spotted back and wing-coverts, was shot in the vicinity of Cape Engaño.

66. *ARDETTA CINNAMOMEA* (Gmel.); Grant, Ibis, 1895, p. 266.

An immature female of the Chestnut Bittern from Manila Bay.

67. *ARDETTA SINENSIS* (Gmel.); Bourns & Worcester, Occ. Pap. Minnesota Acad. i. no. i. p. 32 (1894).

A female of the Little Yellow Bittern from Manila Bay.

68. *DEMIEGRETTA SACRA* (Gmel.); Bourns & Worcester, *t. c.* p. 32.

The Ashy Egret was obtained at Cape Engaño.

69. *HYDROCHELIDON HYBRIDA* (Pallas); Bourns & Worcester, *t. c.* p. 30.

A fine male of the Whiskered Tern from Manila Bay, shot on 28th of April, is in full breeding-plumage.

70. FREGATA MINOR (Gmel.); Bourns & Worcester, *t. c.* p. 32.

The Lesser Frigate-bird obtained at Cape Engaño completes the list.

X.—*Bulletin of the British Ornithologists' Club.*

Nos. XXIX. & XXX. .

No. XXIX. (Oct. 31st, 1895.)

THE twenty-eighth meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 23rd of October, 1895.

Chairman: P. L. SCLATER, F.R.S.

Members present:—G. BARRETT-HAMILTON, E. BIDWELL, PHILIP CROWLEY, W. E. DE WINTON, A. H. EVANS, Major A. P. LOYD, E. NEALE, R. NESHAM, W. R. OGILVIE GRANT, C. E. PEARSON, H. J. PEARSON, FRANK PENROSE, T. DIGBY PIGOTT, C.B., HOWARD SAUNDERS (*Treasurer*), HENRY SEEBOHM, R. BOWDLER SHARPE (*Editor*), Capt. G. E. SHELLEY, W. B. TEGETMEIER, H. M. WALLIS, C. A. WRIGHT.

Visitors: Dr. F. D. DREWITT, C. E. FAGAN, Sir WILLIAM FLOWER, K.C.B., F.R.S., Sir HENRY HOWORTH, K.C.I.E., F.R.S.

The CHAIRMAN read the following Address to the Club:—

ON taking the Chair at the first meeting of the Fourth Session of the B. O. C., I propose to address to you a few remarks on recent events in Ornithology. Before commencing these, however, I must express the regret which all the Members of the Club will feel at the loss we have lately suffered by the death of our friend and colleague, Henry Thornton Wharton, who was well known to us as an expert in British Ornithology, and as the author of a useful list of British Birds, published in 1877. He was also the active and efficient Secretary of the Committee for the preparation of the

B. O. U. List of British Birds, published in 1883, and the General Editor of that work. In the composition of the B. O. U. List, Wharton's classical knowledge was of very great assistance to the Committee, and it was to his learning that we are indebted for the explanations of the generic and specific terms, which form such useful features in that work. I must also not forget that we have lately lost from our ranks an energetic Indian ornithologist, Lieut. Henry E. Barnes, F.Z.S. I may likewise allude to the untimely death, from hematuric fever, of Ernst Baumann, as recently announced at Berlin. Baumann was a young and energetic collector, who had worked hard at the birds of the German Colony of Togoland, on the West Coast of Africa, and had added upwards of 100 species to its avifauna.

I will now proceed to more cheerful topics.

Since we commenced our last Session great progress has been made with the British Museum Catalogue of Birds, and we may well expect that the year 1896 will witness its final completion. Count Salvadori's volume on the Anseres, Tinami, and other lower Orders is complete and ready for publication. The joint-volume of Mr. Saunders (on the Laridæ) and Mr. Salvin (on the Tubinares) is nearly ready, I am informed; and that of Dr. Bowdler Sharpe on the Waders is said to be in a very forward state. There remains, therefore, only Dr. Sharpe's Catalogue of the Divers, Pelicans, Cormorants, and Herons, on which, I believe our Editor is busily employed at the present time. I am much pleased also to learn that steps have been taken towards the compilation of an additional volume (as suggested in my last Address), in which the names of all species described since the commencement of the Catalogue in 1874, and not already recorded in the different volumes, will be enrolled. When this additional volume and the General Index of the whole series shall have been issued, the result will be a work of surpassing value to all workers on the Class of Birds.

As regards other works on systematic Ornithology in progress, I will not say much more on the present occasion. I may, however, mention that Captain Shelley is now engaged in printing a complete Catalogue of African Birds, which he has

had for some years in preparation. Captain Shelley's intimate acquaintance with this subject will, no doubt, render it a most useful and valuable work. As soon as it is finished, we must call upon him to prepare a new edition of the 'Birds of Egypt.' When visiting that country last winter, I received many complaints as to this useful volume being out of print. I may also express a hope, which I am sure will be joined in by all ornithologists, that Capt. Bendire's 'Life-Histories of North-American Birds,' of which the first part was published in 1892, will be continued and completed. Such a work is just what we require for a better understanding of the Nearctic Ornis.

As regards future explorations, on which I sometimes obtrude my advice, it is still abundantly manifest that every piece of new land into which the traveller thrusts his way will continue to supply novelties in Ornithology, as in other branches of Natural History, and that the age of discovery is by no means yet past. Dr. Donaldson Smith's researches in Galla-land, Mr. Whitehead's expedition to the Philippines, and Mr. Baron's excursions in the Andes of Northern Peru, alike prove that such is not the case. From New Guinea, again, and the adjacent islands, as the Members of this Club well know, we still continue to receive new and most strange forms of Paradise-birds. One of the most remarkable of these extraordinary birds (*Pteridophora alberti*) has only become known to us during the last Session of the Club. As the mountains of New Guinea become invaded by the scientific explorer, more, no doubt, remain to follow. But to attain the recesses of Galla-land, the Philippines, or Peru, are tasks not to be undertaken lightly. For shorter excursions which might be accomplished in a winter's travel, besides the expedition up the Euphrates, which I suggested in last year's Address, I will venture to put forward the claims of Tripoli and Arabia Felix to ornithological investigation. Tripoli, lying between Tunis and Egypt, presents features of considerable interest, and though its birds would be few, yet we should like to know what *are* to be found there. Tripoli is commonly supposed to be inaccessible, owing to the fanaticism

of its inhabitants ; but it is evident from Mr. Cowper's recent archaeological expedition into that country (of which an account was given at the recent Meeting of the British Association) that these supposed difficulties are by no means unsurmountable. Where the archæologist can go the naturalist can surely follow. The Editors of 'The Ibis' have already sung the praises of Arabia Felix in their last number (see 'Ibis,' 1895, p. 510). It is a pity that Mr. Bent did not take a collector with him to Dhofar. As he neglected this good opportunity, some ornithologist must follow in his footsteps, and tell us what the birds of Dhofar really are.

In concluding my remarks I will again urge upon you the great want of a modern Handbook on the Anatomy of Birds. Notwithstanding the labours of Garrod, Forbes, and Gadow in this country, and Fürbringer on the continent, we have no convenient systematic treatise on this important subject in a handy form. There is an enormous quantity of knowledge available, but it requires to be concentrated into a tangible shape. I may say, however, that I have some hopes that Mr. Beddard and Mr. Chalmers Mitchell, who is working with Mr. Beddard in the Zoological Society's Prosectorium, will undertake this formidable task, and that before long we may be gratified by having ready for use a Handbook on the Anatomy of Birds, properly illustrated and written in the tongue most familiar to us.

Mr. H. J. PEARSON gave an interesting account of his expedition to Kolguev and Novaya Zemlya, in the yacht 'Saxon,' during the summer of 1895, and exhibited a series of the eggs of the Grey Plover (*Squatarola helvetica*) and the Little Stint (*Tringa minuta*) from Kolguev. At his request, the further account of the expedition relating to Novaya Zemlya was postponed till the next Meeting.

Mr. C. E. PEARSON exhibited one of the nests of the Little Stint, which he presented to the National Collection.

Two nestlings of Bewick's Swan (*Cygnus bewicki*), obtained by Colonel Feilden, a member of the expedition, were also exhibited. These also were presented to the British Museum.

Mr. W. R. OGILVIE GRANT exhibited specimens of some new species of birds sent by Mr. John Whitehead from the Philippines, and described them as follows :—

SIPHIA ENGANENSIS, sp. n.

♂ similis *S. pallidipedi*, sed hypochondriis cervinis distinguenda. ♀ a ♀ *S. pallidipedis*, loris ferrugineis, et fasciâ superciliari angustâ cæruleâ trans frontem ductâ distinguenda. Long. tot. 6·0 poll., culm. 0·7, alæ 3·1, caudæ 2·5, tarsi 0·88.

Hab. Cape Engaño, Luzon.

HYPSIPETES FUGENSIS, sp. n.

♂ ♀. Similis *H. pryeri*, sed pileo colloque brunneis, nec cinereis, et dorso concoloribus, abdomine haud albo notato distinguendus. Long. tot. 10·5 poll., culm. 1·15, alæ 4·85, caudæ 4·65, tarsi 0·85.

Hab. Fuga Island, Babuyan Group.

ZOSTERORNIS DENNISTOUNI, sp. n.

Z. sordide viridescens, notæo angustè albido striolato : subtùs pallide flavus, gulâ lætiore : fronte et sincipite aureis distinguendus. Long. tot. 5·5 poll., culm. 0·7, alæ 2·7, caudæ 2·2, tarsi 0·75.

Hab. Cape Engaño, Luzon.

ORTHOTOMUS CHLORONOTUS, sp. n.

Similis *O. derbiano*, sed notæo toto et subcaudalibus olivascanti-viridibus distinguendus. Long. tot. 4·8 poll., alæ 2·2, caudæ 1·8, tarsi 0·8.

Hab. Cape Engaño, N.E. Luzon.

Mr. GRANT also described a new *Proparus* from Manipur and the Naga Hills, which he proposed to call

PROPARUS AUSTENI, sp. n.

P. similis *P. vinipectori*, sed pileo rufescentiore, et albedine gutturis restrictâ : præpectore vinaceo nec albo distinguendus. Long. tot. 4·5 poll., culm. 0·43, alæ 2·3, caudæ 2·0, tarsi 0·9.

Captain SHELLEY described three new species of African Barbets, as follows :—

STACTOLÆMA WOODWARDI, sp. n.

Simile *S. olivaceo*, Shelley, sed paullo major, et plagâ magnâ sulphureâ auriculari usque ad nucham productâ distinguendum. Long. tot. 6·5 poll., culm. 0·75, alæ 3·5, caudæ 2·3, tarsi 0·95.

Hab. Zulu Land.

TRICHOLÆMA ANSORGII.

Simile *T. hirsuto*, sed hypochondriis latius nigro maculatis, minime albo fasciatis distinguendum. Long. tot. 6·3 poll., alæ 3·5.

Hab. Uganda.

TRICHOLÆMA GABONENSE, sp. n.

Simile *T. hirsuto*, sed brunnescentius, et facie laterali haud albo notatâ distinguendum. Long. tot. 7·3 poll., culm. 0·95, alæ 3·6, caudæ 2·1, tarsi 0·9.

Hab. Gaboon to Cameroons.

Dr. BOWDLER SHARPE stated that a recent examination of the type of *Bradyornis woodwardi* from Natal had convinced him that it was only an example of *Sylvia simplex* (= *S. hortensis*, auctt.) in greenish plumage. The specimen in question had a somewhat abnormally shaped bill, which made it look like a *Bradyornis*, and, moreover, the plumage did not resemble that of any specimen of *S. simplex* with which it had been compared. The greenish plumage must be that of the freshly moulted bird in its winter-quarters, and therefore in a stage not seen in European examples.

Mr. HENRY SEEBOHM described a new species of Eagle-Owl from Sidemi, in the Ussuri country, E. Siberia. The type specimen had been obtained by Kalinowski, and presented by the Warsaw Museum to the British Museum, where it had hitherto been identified with *Bubo blakistoni*. Mr. Seebohm proposed to call it

BUBO DOERRIESI, sp. n.

Similis *B. blakistoni*, sed plaga nuchali albâ magnâ facile distinguendus. Long. tot. 25 poll., alæ 20·5, tarsi 3·2.

A second specimen had been procured by Mr. Doerries

near Vladivostock, and five specimens were now known, all of them agreeing in the possession of a white nape-spot. It would seem also that *B. doerriesi* had a nearly white tail when fully adult.

No. XXX. (Nov. 20th, 1895.)

THE twenty-ninth meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 20th of November, 1895.

Chairman : P. L. SCLATER, F.R.S.

Members present :—E. BIDWELL, Col. C. T. BINGHAM, PHILIP CROWLEY, E. A. S. ELLIOT, E. W. DE WINTON, Col. H. W. FEILDEN, JOHN GERRARD, J. E. HARTING, W. H. HUDSON, Major A. P. LOYD, J. G. MILLAIS, Dr. ST. GEORGE MIVART, F.R.S., R. NESHAM, W. R. OGILVIE GRANT, H. J. PEARSON, FRANK PENROSE, EVELYN RAWSON, HOWARD SAUNDERS (*Treasurer*), R. BOWDLER SHARPE (*Editor*), E. CAVENDISH TAYLOR, Major HORACE TERRY, A. TREVOR-BATTYE, W. B. TEGETMEIER, C. A. WRIGHT, J. YOUNG.

Visitors : Dr. F. D. DREWITT, H. TABOR BROOKS, Admiral A. H. MARKHAM, Sir HERBERT MAXWELL, Bart., M.P., H. MUNT.

Mr. SCLATER called attention to the fine specimen of the Spotted Redshank (*Totanus fuscus*) now living in the Fish House in the Zoological Society's Gardens, and obtained on October 17th, along with other waders, from Spalding in Lincolnshire. It was the first specimen, so far as was known, that had been received by the Zoological Society, and Mr. Bartlett, in all his long experience, had never seen a living specimen in captivity before.

Mr. SCLATER also exhibited a portrait (lithograph) of Prof. Giglioli, presented by the latter to the British Ornithologists' Union.

Mr. SCLATER stated that in view of the large amount of

work he had done in American Ornithology, the Authorities of the Smithsonian Institution had kindly agreed to publish, in the Bulletin of the U.S. National Museum, a complete Bibliography of his published writings from 1844 to 1894 inclusive. The MS. of this volume, which was already in type, had been prepared under his superintendence by Mr. G. A. Doubleday. The list contained the titles of 1239 publications, many of which, however, were short notes and notices.

Mr. HOWARD SAUNDERS gave a brief sketch of the proceedings at the International Congress recently held at Paris to consider the legislation necessary for the protection of birds useful to agriculture, to which he had been accredited as the delegate of the British Government, together with Sir Herbert Maxwell, Bart., M.P. Sir Herbert, who was present as a guest, gave an interesting account of the diplomatic work of the Congress.

Professor MENZBIER, of Moscow, forwarded, on behalf of Mr. Sushkin, the diagnosis of a new species of Goose, which Mr. Sushkin proposed to call

ANSER NEGLECTUS, n. sp.

A. ab A. brachyrhyncho staturâ majore, rostro longiore et graciliore, secundariorum tectricibus atro-fuscis, tectricibus carpalibus discoloribus: ab *A. segetum* pedibus zonaque rostri incarnatis distinguendus.

The full description of this species will appear in 'The Ibis.'

Dr. J. VON MADARÁSZ, of the Hungarian National Museum, sent for exhibition some photographs of a nest of the Chimney-Swallow (*Hirundo rustica*) built in a curious position among the hanging branches of a vine.

Dr. W. T. BLANFORD, F.R.S., communicated a note on the two Sarus Cranes of the Indian Region. He agreed with Dr. Bowdler Sharpe that there were two distinct forms: one found in the Indian Peninsula and the other in the Burmese Provinces. The latter had been recognized by

Dr. Sharpe as the true *Grus antigone* of Linnæus, but, in Dr. Blanford's opinion, this name had been founded on Edwards's description of the Greater Indian Crane (Nat. Hist. Birds, i. p. 45, pl. 45), which was said to have "the neck very long, covered in the upper parts with white feathers, which gradually become ash-coloured towards its bottom." This, Dr. Blanford contended, could only apply to the Indian bird, and he therefore proposed the name of *Grus (Antigone) sharpii* for the dark-coloured Burmese form, which had no white on the neck. The characters of the two species had been clearly given by Dr. Sharpe in the twenty-third volume of the 'Catalogue of Birds,' pp. 263, 264.

Mr. H. J. PEARSON continued his narrative of his recent expedition to Kolguev and Novaya Zemlya, and exhibited specimens of the downy nestlings of Bewick's Swan, the Bean Goose, Common Eider, Grey Plover, Turnstone, Dunlin, and Temminck's Stint. He also brought for exhibition a beautiful series of the eggs of Brünnich's Guillemot.

An interesting discussion ensued on Mr. Pearson's paper, in which Admiral Markham, Mr. Howard Saunders, Mr. Selater, and others took part.

XI.—Notices of recent Ornithological Publications.

1. *Andersen on Diomedea melanophrys in the Færoes.*

[*Diomedea melanophrys*, boende paa Færøerne. Af Knud Andersen. Vidensk. Medd. naturh. Kjøbenhavn, 1894, pp. 241-264, pl. v.

Diomedea melanophrys in the Færøe Islands. By Knud Andersen. Communicated by W. Eagle Clarke, as requested. Proc. Royal Phys. Soc. of Edinburgh, vol. xiii. pp. 91-114, pls. ii. & iii. 1895.]

In these papers full details are given respecting the Albatross which was shot on Myggenæs Holm, after consorting with the Gannets there for more than 30 years. Mr. Harvie-Brown has already given some account of this bird, and of another individual of the same species killed in 80° N. lat. (Zool. 1894, p. 337).

2. *Annals of Scottish Natural History.* Nos. 15 & 16, July & October, 1895.

In No. 15 Mr. William Evans furnishes some interesting notes made during mid-winter in the Island of Bute, famed for the mildness of its climate; where, despite the exceptional conditions of last January, 91 species of birds were observed. In No. 16 Mr. Lionel W. Hinxman contributes a "Report on the Movements and Occurrences of Birds in Scotland during 1894"; Messrs. John Paterson and John Robertson supply notes on 130 species of birds found in East Renfrewshire, 73 of which are believed to have nested; and Mr. Peter Adair gives an account of the nesting of the Wigeon (*Mareca penelope*) in Selkirkshire: a considerable extension of its nesting-range southward. As usual, there are many smaller but valuable notes on Scottish ornithology.

3. '*The Auk.*' July and October, 1895.

Messrs. William Brewster and Frank M. Chapman lead off with an account of a visit to the island of Trinidad, where they were hospitably entertained by a cacao-planter in the high woods, and learned under his guidance more in three weeks than they would otherwise have done in as many months. The most important bird secured was *Nyctibius jamaicensis*, of which a coloured plate, from a photograph taken in life, is given. Passing over some papers of local interest, we come to some remarks by Mr. Lynds Jones on "Bird-Migration in Iowa"; followed by a very interesting account by Mr. Brewster of a remarkable winter-flight of Pine Grosbeaks (*Pinicola enucleator*) in Massachusetts. Mr. Brewster succeeded in tracing the course of this migration, and two maps show the distribution of the species during the winter of 1892-93. This is a thoroughly scientific paper. Dr. Edgar A. Mearns describes a new Heron from the Colorado Desert as *Ardea virescens anthonyi*; Mr. C. C. Trowbridge gives an account of the flights of various species of Hawks in Connecticut; Major Charles Bendire contributes a paper, based on the experiences of Mr. Chase Littlejohn off the Alaskan Peninsula, on the Ancient

Murrelet (*Synthliboramphus antiquus*) ; and Mr. Charles B. Cory describes two new species, *Hyetornis fieldi* and *Elainea cherriei*, from Santo Domingo. Mr. A. W. Anthony feels reasonably sure that he saw an example of the Fork-tailed Gull, *Xema furcatum*, off San Diego, California, so perhaps Néboux's statement that he obtained the type at Monterey may be correct ; especially as examples of this bird have recently been procured by the 'Albatross' at the Cocos Islands, well to the north of the Galápagos. Mr. Chapman gives interesting proof of the wanderings of a *Diomedea exulans*, captured and labelled about 800 miles east of New Zealand, and again taken 12 days later off Juan Fernandez, 3400 miles away. Two more European Wigeons (*Mareca penelope*) are recorded in Indiana by Mr. Ruthven Deane.

The October number begins with a paper on *Æstrelata fisheri* by Mr. Ridgway, illustrated by a coloured plate, and this very rare bird is compared with *Æ. defilippiana*. Mr. Anthony makes two new subspecies : *Colaptes chrysoides brunescens*, from Cape St. Lucas and Arizona, and *Passerella ilica stephensi*, from the mountains of Southern California. Mr. Chas. W. Richmond describes three new species obtained by Lieut. Wirt Robinson from the island of Margarita, off Venezuela, namely *Amazilia aliciae*, *Doleromyia pallida*, and *Cardinalis robinsoni*. Yet again new subspecies of Californian birds, *Callipepla gambeli deserticola* and *Speotyto cunicularia obscura*, are described by Mr. F. Stephens. Mr. Anthony's researches off San Diego have resulted in the acquisition of a small series of *Oceanodroma socorroensis*, a Petrel hitherto known only from the type taken at Socorro Island by C. H. Townsend.

4. *Berlepsch on a new Phœnicophaes and a new Spilornis.*

[Descriptions of two new Species of the Genera *Phœnicophaes* and *Spilornis*, with a note on *Oriolus consobrinus*. By Hans, Graf v. Berlepsch. *Novitates Zool.* ii. p. 70.]

Phœnicophaes microrhinus is the Bornean form of *P. erythrognathus*, and *Spilornis salvadorii* replaces *S. pallidus* (of Borneo) in Nias. The supposed male of *Oriolus consobrinus*, Ramsay, from N.E. Borneo is described.

5. *Blanford's 'Birds of British India.'*

[The Fauna of British India, including Ceylon and Burma. Published under the authority of the Secretary of State for India in Council. Edited by W. T. Blanford. Birds: vol. iii. By W. T. Blanford, F.R.S. 8vo. Pp. i-xiv, 1-450. London: Taylor & Francis, 1895.]

The present volume of the Fauna of British India takes up the subject where it was left by Mr. Oates (*cf.* 'The Ibis,' 1892, p. 283). We have had to wait some years for it, but, like all Mr. Blanford's work, it is well and carefully prepared. It contains the Eurylæmi, Pici, Zygodactyli, Anisodactyli, Macrochires, Coccoyges, Psittaci, Striges, and Accipitres. A fourth volume, of which "a considerable portion is written," will complete this most useful work, which will, of course, for the future, form the groundwork of all ornithological investigations in British India.

We are pleased to see that Mr. Blanford (see footnote p. 164) supports our refusal to use "*Micropus*" for the Swifts instead of "*Cypselus*," and is otherwise generally orthodox in his nomenclature.

6. *Büttikofer on certain Paradise-birds.*

[Einige Bemerkungen über neu angekommene Paradiesvögel. Von J. Büttikofer. Notes Leyden Mus. xvi. p. 36.]

Mr. Büttikofer gives us remarks on some specimens of Paradise-birds recently received by the Leyden Museum from Goenong Tobi, in North-west New Guinea. These consist of an adult male of *Amblyornis inornata*, an adult male of the magnificent new form *Pteridophora alberti*, a peculiarly coloured specimen of *Craspedophora magnifica*, and four male examples of *Parotia carolæ*. Of the last two are adult, and agree generally with Dr. Meyer's description of this remarkable bird, though certain discrepancies are pointed out, and the two others are young. The young plumage is fully described.

7. *Dubois on the Birds of Belgium.*

[Faune des Vertébrés de la Belgique. Par Alphonse Dubois. Série des Oiseaux. Tome ii. (1887-94). Royal 8vo. Bruxelles, 1894.]

We regret the unavoidable delay in noticing the second

and concluding portion of Dr. Dubois' large and compendious work: the first volume of which was reviewed in 'The Ibis' for 1888. The systematic arrangement continues with the Pigeons, the Gallinaceous birds (inclusive of the Sand-Grouse), the Bustards, Plovers, Sandpipers, and Rails; then comes the Crane, followed by the Herons, Storks, &c.; next, the Anatidæ; then the Pelecanidæ; succeeded by the Laridæ, the Petrels, the Auks, Divers, and Grebes. This is, of course, very old-fashioned. We are surprised to see that in the notice of the earlier irruptions of *Syrhantes paradoxus* no mention is made of its occurrences in England and in the south-east of France in 1859. From the list of countries in which *Tetrao tetrix* is found, Switzerland is accidentally omitted; but we do not wish to search for slips in a work of such magnitude. In its 736 pages there is an enormous amount of valuable information, and the whole book is a monument of the author's research; while the coloured maps, illustrating the geographical distribution of each species during the breeding-season and during the winter, show signs of great pains having been taken. The species recorded for Belgium in the body of the work are 318 in number; to which are added in the Appendix *Nisaetus bonelli*, *Cypselus melba*, *Parus cæruleus* var. *pleskii*, *Melanocorypha yeltoniensis*, and *Cursorius gallicus*: raising the total to 323 species and subspecies. We congratulate Dr. Dubois upon the completion of this section of his great work on the Belgian Fauna.

8. *Dwight on the Ipswich Sparrow.*

[The Ipswich Sparrow (*Ammodramus princeps*, Maynard) and its Summer Home. By Jonathan Dwight, Jr., M.D. Memoirs of the Nuttall Ornithological Club. No. ii. 4to. Cambridge, Mass., 1895.]

Discovered among the sand-hills of Ipswich, Massachusetts, in 1868, no clue was obtained to the nesting-place of this species until 1884, when an example of the bird was obtained on Sable Island, Nova Scotia. Dr. Dwight visited that desolate spot in 1894, obtained the eggs, and has

described the bird, its customs, and its habitat in some 54 pages. There is a coloured frontispiece and a full bibliography.

9. *Gütke's 'Heligoland.'* (English translation.)

[Heligoland as an Ornithological Observatory : the Result of Fifty Years' Experience. By Heinrich Gütke. Translated by Rudolf Rosenstock, M.A. Oxon. Royal 8vo. Edinburgh, 1895 : David Douglas.]

Most ornithological books of the present day fall under one of two heads. In the first class, seemingly, the writer conceives it to be his mission to write a book, and judges that one bearing upon birds will best serve his turn : these are the books written in the author's or publisher's interests, and their name is legion. The second class is a very much smaller one, written by men (not usually young) who are willing slaves to our pet science, at which they have been working lovingly for years, and whose hope and object it is to add a modest stone to the edifice of knowledge. And when we meet with one of the last, we feel under a personal obligation to the author. Herr Gütke's book belongs to the second category.

The author of this volume is decidedly at his best when giving us the fruits of his own experience, rather than when theorizing ; but there is enough of real information to make this a book of reference. The best chapters are:—
i. A concise *résumé* of the phases of Migration in Heligoland. ii. "The Direction of the Migration Flight," wherein, as those who have studied the subject would expect, he suggests that most species have their own line of flight, more or less. Herr Gütke in this chapter, and all through the book, hardly seems to take into consideration the cyclonic nature of most winds, but appears to treat them all as blowing in a direct line : a theory not supported by a study of weather charts, which show the same wind striking different places, from different points, at the same time. Chap. v. ("Meteorology of Migration") is excellent throughout and full of information. Chap. viii. ("What guides Birds during their Migration") is more theoretical and less helpful. But,

given the facts that the young birds in many (not all) cases are the first to move in the autumn, it is difficult to suppose that birds are guided, especially at night, by anything but that sense of locality and direction with which we are so familiar in the homing-pigeon, and which human races lose in proportion to their civilization. We have, however, noticed that the young birds in autumn are generally accompanied, or even preceded, by a sprinkling of adults, which have presumably lost their mates or failed to pair. In chap. x., relating to colour-changes in plumage without a moult, we have perhaps the most valuable chapter in the book.

As to the calculated rates of flight, *e. g.*, such as that of the Bluethroat, 180 miles an hour (p. 66), and the Hooded Crow 108 (p. 68), they seem singularly inconclusive. If Herr Gätke had telegraphed to Mr. Cordeaux that a certain Hooded Crow—with a white patch on one wing or other recognizable mark—had left Heligoland at a certain hour on a certain day, and Mr. Cordeaux had been on the Lincolnshire shore to meet that individual Crow three hours later, we should then have something definite to go by. Migrating birds travel, as a rule, not in parties, but in streams. We have seen on the east coast Crows, Jackdaws, Wood-Pigeons, and Larks coming in from the sea in a continuous—though thin—stream, high up, during a whole afternoon. Which part of it would give “time”? However, criticism of details apart, this is an extremely valuable book, and every patiently accumulated storehouse of facts and observations like this helps us materially towards an ultimate knowledge of the migration of birds. The translation has been well executed. In preparing an edition for English readers, however, the sponsor (Pref., p. v) would have done better in trying to bring the information relating to England up to date by footnotes, as has been mostly done with the nomenclature. As it is, we read that the Barred Warbler “has not been met with in England up to this date” (*i. e.* 1890, the date of the German edition), whereas six specimens had then been obtained in Great Britain; that there are only two known species of *Oriolus*, viz. *O. galbula* and *O. kundoo* (p. 227), whereas vol. iii. of

Brit. Mus. Cat. Birds, published in 1877, gives 33 species; that *Fringilla hornemanni* "is found as a breeding-species in Northern Iceland" (p. 394), whereas *L. linaria* is the breeding species there, *L. hornemanni* only occurring as a rare winter visitor; and that *Colymbus adamsi* "is an American species" (better circumpolar) "said to have occurred once or twice on the coast of England" (p. 572), whereas several undoubted occurrences might have been cited.

10. *Godman and Salvin's 'Biologia Centrali-Americana.'*

[*Biologia Centrali-Americana*: or, Contributions to the Knowledge of the Fauna and Flora of Mexico and Central America. Edited by F. DuCane Godman and Osbert Salvin. (Zoology.) Parts CXXIII.-CXXV. 4to. London: 1895. Published for the Editors by R. H. Porter, 18 Princes Street, Cavendish Square, W.]

Parts CXXIII., CXXIV., and CXXV. of this important work have been issued since our last notice ('The Ibis,' 1895, p. 394). They contain two portions of the second volume of Aves (pp. 457-480), and carry on the subject through the Motmots and Kingfishers to the commencement of the Trogons. The term *Prionornis* is proposed in place of *Pronorhynchus*, which has been previously used in Crustacea.

11. *Hamilton on the Feathers of the Moa.*

[On the Feathers of a small Species of Moa (*Megalapteryx*) found in a cave at the head of the Waikaia River, with a notice of a Moa-hunter's Camping-place on the Old Man Range. By A. Hamilton. Trans. N. Zealand Inst. xxvii. p. 232.]

After mentioning previous instances of the discovery of the feathers of *Dinornis* in New Zealand, Mr. Hamilton tells us of the finding by a miner of a very complete specimen of the dried leg of a small species of Moa in a cave in one of the Wakaia gorges. The leg "still retains the dried skin and muscle, and carries a quantity of double-shafted feathers." It agrees with "Prof. Owen's specimen assigned to *Dinornis didinus* in having the metatarsus feathered." This interesting specimen will be described by Dr. T. J. Parker of Otago. Mr. Hamilton made an expedition into this district in 1894

and examined the caves, whence he obtained a large number of feathers of the same small Moa. He also discovered a "Moa-hunter's Camp," and remarks :—

"There is absolute evidence in this case of the use of the Moa as food. The quantity of bones lying by the ovens in which they were cooked, and the comparative absence of any other inducement (Wekas being the only possible prey) for hunters to visit and camp on such an inhospitable spot, all point to these being Moa-hunters' encampments, to which blocks of suitable stone have been brought from afar to serve as knives for the feast. The caves and shelters in the huge mass of mountains close at hand have furnished some of the best preserved specimens of the Moa yet found, and were, no doubt, a summer feeding-ground of the Moa, to which yearly expeditions were made."

12. *Hamilton on the Birds of Macquarie Island.*

[Notes on a Visit to Macquarie Island. By A. Hamilton. Trans. N. Zealand Inst. xxvii. p. 559.]

Mr. Hamilton visited Macquarie Island, south of New Zealand, in 1894, to study the plants and general natural history, and gives us an interesting account of it. Several pages are devoted to his notes on the birds of the island, and a list of them is given. The only land-bird is a Parrot (*Cyanorhamphus erythrotis*), now probably extinct. Four Penguins visit the island for breeding purposes—the "King-Penguin" (*Aptenodytes pennanti*), the "Royal Penguin" (*Eudyptes schlegeli*), the "Victoria Penguin" (*E. filholi*), and a Rock-hopper (*Eudyptes*). Weka Rails have been introduced, and have multiplied exceedingly.

13. *Hartert on Birds from Fergusson Island.*

[Some new and other rare Birds from Fergusson Island. By Ernst Hartert. Novitates Zool. ii. p. 61.]

Six birds are described as of special interest, from a collection made in Fergusson Island, of the D'Entrecasteaux group, by Mr. A. Meek. Among these *Cyclopsittacus virago*, *Loriculus aurantiifrons meeki*, and *Ptilopus lewisii vicinus*

are new species or subspecies from Fergusson Island. *Chalcophaps stephaniae mortoni* is a new subspecies from the Solomon Islands.

14. *Hartert on a new Prionochilus.*

[A new *Prionochilus* from the Philippines and note on an *Anthreptes*. By Ernst Hartert. *Novitates Zool.* ii. p. 64.]

Prionochilus inexpectatus is a new species discovered by Mr. A. Everett during his recent expedition to the Philippines, from which we regret to hear he has been obliged to return through having met with a serious accident. Specimens in the Tring Museum are from Luzon near Manila and from Mindoro.

15. *Hartert on a new Goura.*

[On a supposed new Species and some Varieties of *Goura*. By Ernst Hartert. *Novitates Zool.* ii. p. 67.]

Goura cinerea is a small and curiously coloured species based on a specimen found among a lot of Arfak trade-skins. The Tring Museum has also specimens of *Goura beccarii* from Humboldt Bay and German New Guinea.

16. *Hartert's Notes on Humming-birds.*

[Notes on Humming-birds. By Ernst Hartert. *Novitates Zool.* ii. p. 68.]

Mr. Hartert gives notes on *Selasphorus flammula* and other species, and describes as a new subspecies *Eriocnemis derbyi longirostris* from Bogotá.

17. *Hartert on Birds from the Natuna Islands.*

[List of a second Collection of Birds from the Natuna Islands. By E. Hartert. *Novitates Zool.* ii. p. 466.]

A second * collection of birds from the Natuna Islands has been received at the Tring Museum from Mr. Hose, who sent his brother there with a staff of collectors from July to

* For a notice of the first collection see *Ibis*, 1895, p. 151.

October 1894. Examples of 93 species were obtained. *Gaucalus sumatrensis difficilis* is a new subspecies from Balabac, and *Macropteryx comata major* is another from the Philippines, while there are several species additional to the former list. Mr. Hartert now concludes that the Natuna avifauna is more Bornean than—as he had previously supposed—Malaccan.

18. Hudson's 'British Birds.'

[British Birds. By W. H. Hudson, C.M.Z.S. With a chapter on Structure and Classification, by Frank E. Beddard, F.R.S. London: Longmans, 1895.]

The public appetite for books on British birds must for the present, one would think, be nearly satiated, but every one will appreciate a volume on any branch of natural history from the facile pen of Mr. W. H. Hudson. The author wisely confines his main attention to the "appearance, language, and life-habits of the species that reside permanently or for a portion of each year" in these islands; others being mentioned, but not described at length. The nomenclature and arrangement of the B. O. U. List are followed throughout, and all scientific details are avoided. Mr. Hudson has thus been able to compress his British Birds into a volume of 360 pages, which is "intended for the general reader, and especially for the young."

The volume is illustrated by eight coloured plates, taken from original drawings by Mr. Thorburn, and by 100 figures of birds by Mr. G. B. Lodge introduced into the text. Mr. Beddard has written an introductory chapter on the structure and classification of birds, which puts those branches of the subject very clearly and concisely before the reader.

19. Irby's 'Ornithology of the Straits of Gibraltar.'

[The Ornithology of the Straits of Gibraltar. By Lieut.-Col. L. Howard L. Irby, F.L.S., late Seventy-fourth Highlanders. Second edition. Revised and enlarged. With an Appendix containing a List of the Lepidoptera of the Neighbourhood. 4to. London, 1895. R. H. Porter, 18 Princes Street, Cavendish Square, W.]

Col. Irby has favoured us with a copy of his new and

revised edition of 'The Ornithology of the Straits of Gibraltar,' which we ought to have noticed before, as it was published early last year, but it has been inadvertently passed over. The new edition is larger in size, printed in better text, and in every way a handsomer book than the former one. It is, moreover, illustrated by some beautiful full-page plates of birds drawn by Thorburn, and taken from living specimens in Lord Lilford's aviaries, which illustrate the following species of birds—the Bearded Vulture, the Blue-winged Magpie, the Black Vulture, the Golden Eagle, the White-shouldered Eagle, the Booted Eagle, the Mediterranean Peregrine, and the Andalucian Bush-Quail. There are besides some excellent lithographs of various sporting and birds'-nesting scenes, executed by Smit, and a quantity of illustrations introduced into the text, mostly from photographs taken by Major W. Verner. Col. Irby is one of our best authorities on the birds of the two districts comprised in the present volume, so that we need hardly say that the letterpress is in every respect up to the mark. It is, in fact, a pleasure to open a book so well got up, so excellently illustrated, and so thoroughly "up to date." We have no doubt that it will attain a large circulation, and trust that before another 20 years are passed a third edition will be called for.

20. *Jentink on the Birds of Holland.*

[Catalogue systématique de la Collection de feu Mr. J. P. Van Wickevoort Crommelin. Par F. A. Jentink. Mus. d'Hist. Nat. Pays-Bas, tome xiv. (1894).]

In 1892 (*Ibis*, 1892, p. 352) we recorded the death of John Peter van Wickevoort Crommelin, of Haarlem, and announced that he had bequeathed his unrivalled collection of the birds of Holland to the Leyden Museum. The 14th volume of the work above cited is devoted by Dr. Jentink to a catalogue of this collection. There are 306 species included in the list; every specimen of each species, with its date and locality, being separately indicated. This is a very useful piece of work to the student of European ornithology.

21. *Lawrence's 'Valley of Kashmir.'*

[The Valley of Kashmir. By Walter R. Lawrence, I.C.S., C.I.E. London, 1895.]

He who would know anything about Kashmir cannot do better than turn to this beautifully printed and well illustrated monograph, which contains an excellent summary of our knowledge of this distant portion of the British Empire, by one who is specially qualified to treat of it. The chapter on the Fauna of Kashmir contains a list of the Birds with field-notes, arranged according to Dr. Bowdler Sharpe's classification, with the nomenclature of Mr. Oates, so far as that goes: 208 species are included.

22. *Meyer on the Egg of a new Bower-bird.*

[Ueber das Ei einer unbekannten *Chlamydodera* von Deutsch Neu Guinea. Von A. B. Meyer. Abh. u. Ber. königl. zool. u. anthro. Mus. Dresden, 1894-95, No. 10.]

The author describes and figures the beautiful egg of a Bower-bird of the genus *Chlamydodera* which was found by a collector, A. Grabauer, on a palm-leaf near Constantinhafen in Kaiser-Wilhelm's Land, New Guinea. He proposes *C. recondita* as a name for the bird that laid the egg, but it seems to us that it will be rather difficult for future oologists to identify the layer of it!

23. *Ornis*, 1895. Parts 1-3.

[*Ornis*: Internationale Zeitschrift für die gesammte Ornithologie. Herausgegeben von Prof. Dr. R. Blasius. viii. Jahrgang (1895), Hefte 1-3.]

We welcome the reappearance of our contemporary after its cessation at the end of 1891. The resumed periodical opens with a list, by Freiherr Besserer, of the birds of the neighbourhood of Dieuze, in Lothringen, or, as more familiarly known to us, Lorraine. Dr. Rudolf Blasius follows with the reports for 1891-1893 of the birds observed at the German light-houses and light-ships; and the same author gives a list of the species recorded at the light-houses of

Malta and Gozo in the years 1886-1894, the number being 288.

In Heft 3 are two papers on the Nutcracker during the autumn and winter of 1893-94: the first by Ritter Tschusi zu Schmidhoffen, and relating to Austria-Hungary, while the second is by Dr. Blasius and treats of the occurrences of the bird from Russia westward. The individuals obtained appear to have belonged to the Siberian form which Dr. Blasius calls *Nucifraga caryocatactes leptorhynchus*. Freiherr von Berg contributes notes on 34 species of birds noticed in Alsace-Lorraine in 1885-1892, and his paper is furnished with a map showing the stations for observation. Dr. Blasius gives an account of a visit to San Sebastian, Guipuzcoa, with the late M. Olphe-Galliard, when they examined the collection of birds formed by Don Angel de Larinna; while two short papers on a few birds observed in the Straits of Gibraltar, and on 10 species met with at Reykjanes, Iceland, conclude the Heft.

24. Parker on the Dinornithidæ.

[On the Cranial Osteology, Classification, and Phylogeny of the *Dinornithidæ*. By T. Jeffery Parker, D.Sc., F.R.S. Trans. Zool. Soc. xiii. p. 373.]

After the labours of Owen, Lydekker, and Hutton, it might have been supposed that the subject of the Dinornithidæ had been nearly exhausted. But this is by no means the case. Lydekker and Hutton came to very different results in their recent studies of this group, one admitting four genera and 19 species, and the other seven genera and 26 species. Moreover, they were by no means in accord as regards nomenclature. Prof. Parker again has occupied himself specially with the cranial osteology of this group. Now those who have studied Huxley's work on the class of birds know how important an element is the skull in their classification, and how much better results it is likely to give than the leg-bones. There can be no doubt, therefore, that in devoting his principal attention to the comparatively

neglected cranium Prof. Parker has done well, and those who study his memoir cannot fail to be impressed with his careful work and well-drawn conclusions, which result in the proposal of the following classification of the subclass Ratitæ:—

Subclass **RATITÆ**, Merrem.

Order I. STRUTHIONES, Newton.

Fam. STRUTHIONIDÆ. Genus *Struthio*.

Order II. RHEÆ, Newton.

Fam. RHEIDÆ. Genus *Rhea*.

Order III. MEGISTANES, Newton.

Suborder 1. CASUARIFORMES, Fürbringer.

Fam. 1. CASUARIIDÆ. Genus *Casuarus*.

„ 2. DROMÆIDÆ. Genus *Dromæus*.

Suborder 2. APTERYGIFORMES, Fürbringer.

Fam. 1. DINORNITHIDÆ.

Subfam. a. Dinornithinæ. Genus *Dinornis*.

„ b. Anomalopteryginæ. Genera *Pachyornis*,
Mesopteryx, *Anomalopteryx* *.

„ c. Emeinæ. Genus *Emeus*.

Fam. 2. APTERYGIDÆ. Genus *Apteryx*.

25. Pražák on some of the Paridæ.

[Versuch einer Monographie der palæarktischen Sumpfmöven (*Pecile*, Kaup). Von J. P. Pražák. Ornith. Jahrb. vi. Heft 1, pp. 8–59.

Einige Notizen über die Kohl-, Hauben- und Blaumöven. *Op. cit.* Heft 3, 1895.]

Herr Pražák has taken the Tits under his special charge, and, besides the two treatises cited above, has published a series of articles on *Parus ater* and its near allies in the ‘Mittheilungen des ornithologischen Vereines in Wien’ for 1894. In the first of the above papers he leads us into a perfect labyrinth of subspecies, and after trying to follow him through 59 pages, we find “to be continued.” In the second paper the British and Persian Great Tits are separated as subspecies—the former under the name *Parus major newtoni*, and its Persian representative as *P. m. blanfordi*. We wish our good friends joy of their name-fellows!

* And probably *Megalapteryx*.

26. *Reichenow on new African Birds.*

[Neue afrikanische Vogelformen im Tring Museum. Von Anton Reichenow. Novit. Zool. ii. p. 159.]

Two new species of a new genus of Timeliidæ are described as *Bathmocercus vulpinus* and *B. murinus*. Both are from the Aruwimi River, Congoland. The type of *Bathmocercus* is *B. rufus*, Reichenow. *Andropadus gracilirostris liberiensis* is a new subspecies.

27. *Reichenow on the Ornithological Literature of 1890.*

[Bericht über die Leistungen in der Naturgeschichte der Vögel während des Jahres 1890. Arch. f. Nat. 1891, Heft 1 (Oct. 1895).]

Here we have an excellent report on the ornithological literature of 1890, only it is issued four years too late. That it is not necessary to delay a publication of this sort so long is manifest from the fact that the 'Zoological Record,' containing a corresponding account of the ornithological literature of 1894, was published in October 1895.

28. *Rothschild on a new Paradise-bird.*

[A new Bird of Paradise. By the Hon. Walter Rothschild. Novit. Zool. ii. p. 60.]

Astrapia splendidissima is quite worthy of its name, and, besides its striking plumage, differs in several structural points from the typical members of the genus. The type was found among a number of "trade-skins" said to have come from the foot of the Charles Louis Mountains, in Dutch New Guinea.

29. *Sharpe's Handbook to the Birds of Great Britain.*

[Allen's Naturalist's Library. Edited by R. Bowdler Sharpe, LL.D., F.L.S., &c. A Handbook to the Birds of Great Britain. By R. Bowdler Sharpe, LL.D., Zoological Department, British Museum. Vol. II. London: W. H. Allen & Co., 1896.]

The second volume of Dr. Bowdler Sharpe's 'Birds of Great Britain' is now before us. We have already spoken freely of the plates issued with the former volume (see 'Ibis,' 1894, p. 565), and it is hardly necessary to repeat our critical

remarks on those of the present volume, which are similar in character, though slightly better coloured. As regards the letterpress, we are quite satisfied with the plan followed in the present work and with the way in which it is carried out. But in spite of the lively style in which Dr. Sharpe has replied to our former remarks in the present volume, we are still much discontented with the nomenclature which he employs. It is certainly some alleviation that he does not insist in his Handbook on commencing Birds at the "wrong end," as he has done in some of his previous publications. In the first volume the Passeres were treated of, and now we have the Picarians, Striges, Accipitres, and others, all in familiar order, although strange names replace many of the ordinarily accepted terms of the B. O. U. We are also grateful that he does not follow our American friends in their views as to the nomenclature of the Swans and Swallows. But we see that *Micropus* is retained as the generic name of the Swifts, although it has been shown (Ibis, 1894, p. 131) to have been previously proposed (and to be now in actual use) for a genus of plants. At the same time the family is called "Cypselidæ," not "Micropodidæ." We remark also that the "Suborder Coraciæ" is translated "Picarians," whereas Nitzsch's term Picariæ was, we believe, taken from *Picus*, a Woodpecker. But the Woodpeckers are placed in another suborder! In nomenclature, therefore, we are still at variance with Dr. Sharpe. Nor do we by any means allow that our views are "old-fashioned," and that the verdict of the future, which he appeals to, will be given in his favour.

30. Stone on the Generic Term *Calliste*.

[The Priority of the Names *Calliste*, *Aglaiæ*, and *Calospiza*, and their use in Ornithology. By Witmer Stone. Proc. Ac. Nat. Sci. Philad. 1895, p. 251.]

We cannot agree with Mr. Stone in his proposal to reject the name *Calliste*, long used for a genus of Tanagers (v. Cat. B. xi. p. 95), because in 1791 Poli employed *Callista* for a mollusk. If *Picus* and *Pica* are both retained for birds

(now, as they were by classical writers), why should not *Calliste* be used for a bird and *Callista* for a mollusk? But we are told that, in fact, *Callista* is not really used at all in Conchology, although Mr. Stone thinks that it "should be adopted for the genus now known as *Cytherea*." There seem to be no limits to the "fads" of modern hunters after priority.

31. *Suchetet on Hybrids among Birds.*

[Les Oiseaux Hybrides, rencontrés à l'état Sauvage. Par André Suchetet. Cinquième Partie, Additions et Corrections. Mém. Soc. Zool. France, viii. p. 473.]

The fifth and concluding part of M. Suchetet's 'Oiseaux Hybrides' contains additions and corrections to his valuable account of this important subject, on which he has laboured so long and so well. Part iv. does not appear to have reached us, but part iii. was noticed in 1893 (*Ibis*, 1893, p. 149). We all know how careful M. Suchetet is in endeavouring to obtain correct information in every case and in stating the results of his own examinations.

32. *Trevor-Battye's 'Ice-bound on Kolguev.'*

[Ice-bound on Kolguev, a chapter in the Exploration of Arctic Europe, to which is added a Record of the Natural History of the Island. By Aubyn Trevor-Battye, F.L.S., F.Z.S., M.B.O.U., &c. With numerous Illustrations by J. T. Nettleship, Charles Whymper, and the Author, and three Maps. Royal 8vo. Constable & Co., Westminster, 1895.]

The interesting and well-written narrative of Mr. Trevor-Battye's adventures in Kolguev and among the Samoyeds that frequent that island is dedicated to the President of the B. O. U., and will be much appreciated by all the members thereof. It contains numerous allusions to birds, and "The Goosing" of the native hunters has, as it well deserves, a chapter to itself. Besides this there is a systematic account of the ornithology of the island, with field-notes on all the 47 species included in it. The Passeres are seven in number—the Wheatear, White Wagtail, Red-throated and Meadow-Pipits, the Snow- and Lapland Buntings, and the Shore-Lark. Curiously enough (as the author has confessed to

us below, p. 155), the Curlew-Sandpiper (*Tringa subarquata*) is omitted in the list, though mentioned in the text (see p. 209). The volume is well printed, well illustrated, and well mapped, and does great credit to all who are concerned in it.

XII.—*Letters, Extracts, Notices, &c.*

WE have received the following letters, addressed "to the Editors" :—

SIRS,—I am much surprised to learn from Mr. Ogilvie Grant's 'Game-birds of the British Museum,' p. 65, and Game-birds, in 'Allen's Naturalist's Library,' p. 52, that the Ural Capercaillie, *Tetrao urogallus uralensis*, was first described by Mr. Nazarov. The facts are that, when working with the late Mr. Severtzow, I found some differences between the Capercaillies from Central and Eastern Russia, and in my manuscript-catalogue of the birds of Russia I named the eastern form *Tetrao urogallus*, var. *uralensis*. This name was employed by Mr. Nazarov, my pupil in ornithology, to whom, when he was making the list of Kirgez birds ('Recherches zoologiques' &c.), I communicated both my own list of Russian birds and Severtzow's list of the birds of the valley of the river Ural, with this bird designated as follows :—

"TETRAO UROGALLUS, var. URALENSIS, *Sev. & Menzb.*"

A little later, after a careful comparison of Central-Russian Capercaillies with specimens from Eastern Russia, received by me through the kindness of Mr. Lorenz, I deduced a conclusion that the eastern Capercaillie was a good subspecies, and I expressed my idea on this subject in 'The Ibis' (1887, p. 303), where for the first time a diagnosis of the bird was published, though many skins were sent abroad previously by Mr. Lorenz under the name "*Tetrao urogallus*, var. *uralensis*, *Menzb.*"

Hoping that you will be good enough to re-establish the truth by publishing this letter,

Yours &c.,

University, Moscow,
October 18th, 1895.

M. MENZBIER.

SIRS,—With reference to your notice ('The Ibis,' 1895, p. 495) of Mr. Harvie-Brown's pamphlet on the island of Rockall, I should like to mention that subsequently to the publication of this I have seen Captain Edward Freshwater, of the Grimsby cod-liner 'Undine,' and formerly of the 'Ada.' In the latter Capt. Freshwater has fished off Rockall, and he has given me much interesting information as to the appearance and character of the rock and the names of those species of birds which he supposed to resort there for breeding purposes. Amongst these he mentioned one as nesting which he called the "Rockall Lyre-bird," a large sort of Shearwater, and this was common in the vicinity. He had fished in all parts of the North Sea and had never seen this bird anywhere except here and on the Færoe bank. This doubtless is *Puffinus major*. It is to be hoped that in the next summer some enterprising ornithologist will succeed in reaching and landing upon the rock—a most difficult matter, even in the calmest weather—so as to verify this statement. According to Herr H. C. Müller, *Uria brunnichi* is also found nesting on Rockall, but further confirmation as regards this species also is very desirable.

Yours &c.,

JOHN CORDEAUX.

Great Cotes House, R. S. O., Lincoln,
October 22nd, 1895.

SIRS,—May I, in 'The Ibis,' correct a mistake in my book 'Ice-bound on Kolguev'? "Brünnich's Guillemot" (p. 20) should be "The Common Guillemot."

By a mischance the Curlew-Sandpiper, though referred to in the body of the book, is missing from the special chapter and from the index. In this connexion the word "back" should, of course, be "beak."

Yours &c.,

AUBYN TREVOR-BATTYE.

Rare Birds at Madras.—From the Report of the Madras Government Museum for the year 1894-95 we learn that "an Oyster-catcher (*Hematopus ostralegus*), which is rarely

seen in the Madras market, was obtained there in October, 1894, and that on the same day two specimens of the 'Lesser Coot-footed Stint' (*Phalaropus hyperboreus*) were also obtained. As regards the latter, Jerdon states that 'a single instance is on record of this bird in India. It was obtained by Dr. Stewart at Madras. Possibly it may be found to be more common when the Indian sea-coast has been well examined.'"

Occurrence of Bulweria columbina in China.—Mr. J. D. de La Touche has sent home a Bulwer's Petrel, which I hoped might prove to be G. R. Gray's Pacific species, *B. macgillivrayi*, described (in 'Cat. Birds of Tropical Islands of Pacific Ocean,' 1859, p. 56) as differing from *B. columbina* in having a larger bill and no sooty brown on the wings. Mr. La Touche's specimen, however, agrees with *B. columbina* in both these respects. It was obtained at Chapel Island, Amoy, in 1894.—HENRY H. SLATER*.

Nesting of Kaup's Flycatcher (Arses kaupi).—The beautiful nest of this pretty Flycatcher was found on December 3rd, 1894, by Mr. R. Hislop, Bloomfield River, Queensland. It was situated at the end of two hanging creepers about 30 feet from the ground and contained two eggs. A similar nest was found, and was likewise built on creepers, about 20 feet high, but it contained two young birds. The nest has the appearance of a hanging basket, cup-shaped, and is made of fine twigs from a scrub-creeper, and lined at the bottom with a few long hairlets. It is lightly bound together on the outside with cobwebs, on which are fastened pieces of lichen; it is slightly higher on each side, where it is bound on to the creepers with cobweb. It measures:—Internal diameter $1\frac{7}{8} \times 2$ inches, external $2\frac{1}{4}$; internal depth 1 inch in centre, and at the two sides $1\frac{3}{4}$; external $1\frac{3}{4}$ inch, and at sides $2\frac{1}{2}$. The eggs are nearly oval, very slightly tapering at the smaller end; they measure, A 2.04×1.46 , B 2.09×1.47 centimetres. They have a greyish cream-coloured ground, thickly sprinkled

* [*Bulweria bulweri* of O. Salvin.—EDD.]

with various-sized blotches of dull reddish brown, which are slightly more numerous at the larger end.—D. LE SOUEF.

Movements of Ornithologists.—We are pleased to hear that Mr. Theodore Bent will take a naturalist with him during his new expedition this winter. He has arranged that Mr. A. J. Chholmley shall accompany him, but he is going, not to Dhofar, we are sorry to say, but to the country on the Red Sea south of Suakim. This district has been already well worked by Heuglin, Jesse, Blanford, and others, but there are sure to be a lot of crumbs left, which an observant collector will pick up.

Mr. E. C. Taylor leaves for Egypt at the end of 1895, and, though not intending to devote himself specially to collecting birds, will be sure to make some additions to our knowledge of the Egyptian avifauna.

Mr. Perkins, the collector of the Committee for the Exploration of the Sandwich Islands, when last heard of was in Kauai. We trust that he will soon send home such specimens as are required for Mr. Rothschild and Mr. Scott B. Wilson to finish their respective works on the Hawaiian avifauna.

A new collection of birds has just been received from Mr. Alexander Whyte, Mr. H. H. Johnston's collector in Nyasaland, who is again settled at his headquarters at Zomba. These will be placed in Capt. Shelley's hands for determination.

The Position of the Feet of Birds during Flight—Mr. Holdsworth, in his interesting paper on this subject, seems to doubt whether all birds of prey carry their legs extended straight out behind during flight. I do not think it is likely that any do not. I have personal experience of most of the large Falcons, Goshawks, Sparrow-Hawks, in both a wild and trained state, and am convinced, as I have already stated in 'The Ibis,' that they invariably carry their legs behind, and that when carrying their prey they still maintain the same position, so that they tow their prey after

them, a performance which falconers, unfortunately, have too frequent opportunities of observing! The Owls carry their prey extended behind in the same way. I am fairly acquainted with most of the European Eagles and Vultures, and all that I have had opportunity to see sufficiently close carry their feet in the backward position, and their prey in the same manner, or, if too heavy, almost extended below them.

Pigeons carry their feet extended behind; the position is easily seen by watching white Pigeons flying round, when their pink legs show up plainly against their white feathers, or in watching Wood-Pigeons coming in to roost.

When launched on the wing, all our game-birds carry their legs out behind.

The Coots and Rails undoubtedly carry their feet in the backward position. This may be very plainly seen when Coots and Moorhens are passing overhead.

Although the backward position is the usual one with the Gull tribe, when floating in the air they very frequently tuck up one leg, in the same manner that birds do when standing on one leg on the ground. The leg is evidently resting on the shafts of the flank-feathers, and maintained in that position by the feathers themselves, without any effort on the part of the bird. Frequently first one and then the other leg is tucked up, so that the bird appears to have no legs at all. I have seen a Mallard do the same thing when passing over, although the backward position is, of course, the normal one in the Duck tribe.

Both the Bustards and Cranes carry their legs behind.—
E. G. B. MEADE-WALDO.

Egg of Pityriasis gymnocephala.—Mr. Edward Bartlett, Curator of the Sarawak Museum, sends us an account of the egg of the curious Bornean Crow-Shrike, *Pityriasis gymnocephala*, which he has published in the 'Sarawak Gazette' of November, 1895. The egg was taken from the body of a specimen recently shot, and was "ready for exclusion."

The egg is about the size of a Thrush's (*Turdus musicus*),

and measures approximately 1.25×1 inch. It is pure white, sparingly marked all over with large round and oval bright brown and slaty-grey spots of various sizes, the majority of these spots forming an irregular ring on the larger end. Mr. Bartlett is of opinion that, judging from the egg, the nearest ally of *Pityriasis* would be *Gymnorhina* of Australia, as arranged by Gadow (Cat. of Birds, viii. p. 90).

Proposed Memoir of the late A. G. More.—Many friends of the late naturalist Alexander G. More have expressed their wishes to see a short memoir of him published. Any one having letters or papers of interest relating to this subject is requested to lend them for selection to his sister, Miss More, 74 Leinster Road, Rathmines, Dublin.

XIII.—*Obituary.*—Mr. H. T. WHARTON, Mr. H. SEEBOHM, Lieut. H. E. BARNES, Dr. R. BROWN, and the Rt. Hon. T. H. HUXLEY.

HENRY THORNTON WHARTON, whose death we recorded in our last number, was the third son of the late Rev. H. J. Wharton, vicar of Mitcham, Surrey, where he was born on Nov. 16th, 1846. He was educated at Charterhouse and Wadham College, Oxford, where he took the degree of B.A. in 1871 and M.A. in 1874. Wharton selected the profession of Medicine, and became M.R.C.S. Eng. in 1875. In addition to a few papers in 'The Zoologist' and 'The Ibis' on the orthography, derivation, or meaning of the names of birds, he published a 'List of British Birds,' the genera being arranged according to Sundevall's method, and displayed much classical knowledge as editor of the 'B. O. U. List of British Birds,' during the five years which elapsed between the inception and conclusion of that work. Apart from ornithology, he was an excellent Greek scholar and a leading authority upon Sappho.

HENRY SEEBOHM.—With very deep regret we record the loss of our excellent friend and coadjutor Henry Seebohm,

one of the most constant and valued contributors to this Journal. Henry Seebohm, who died at his residence in South Kensington on the 26th November last, was the son of a well-known member of the Society of Friends, and descended from a family which, though resident in Germany for several generations, came originally from Sweden. Born at Bradford in 1832, Henry Seebohm evinced from his boyhood a strong love of natural history, and devoted to it all the time he could spare from his hours of business. But some years elapsed before he acquired those ample means which enabled him to gratify his tastes more completely. Then, not content with being a mere collector and cabinet naturalist, he made journeys into various parts (Greece, Asia Minor, Scandinavia, Germany, and Russia), in order to collect specimens and to study his feathered favourites in their native haunts. One of his most successful expeditions was that to the valley of the Lower Petchora, in Northern Russia, in company with Mr. J. A. Harvie-Brown, in 1875, when eggs of the Grey Plover, the Little Stint, and the Petchora Pipit (*Anthus gustavi*), besides those of several other rare species, were obtained. In 1877, in company with Captain Wiggins, Seebohm visited the valley of the Yenesei, in Siberia, and again made important collections of birds and eggs. He also spent some time on the island of Heligoland, and there studied the migrations of birds under the veteran ornithologist, Herr Gätke. Later on he visited various parts of Southern Europe, and undertook a journey to South Africa, in order to observe European birds in their winter-quarters, as well as to collect materials for his work on the Geographical Distribution of the *Charadriidæ*, which appeared in 1888.

Kind-hearted and liberal, Seebohm was always ready to assist a struggling ornithologist, and will be greatly missed by a large circle of friends. To the British Museum of Natural History he for many years was a most liberal donor, and we are pleased to be able to say that the whole of his collection of birds has been bequeathed to that institution. For some time past Seebohm had been in weak health, but

his interest in ornithology never slackened. So lately as October the 23rd he attended a meeting of the British Ornithologists' Club, and took part in their discussions, and up to within a week of his death was able to see his friends and to converse on moot questions in ornithology.

At the time of his death Seebohm had in preparation a paper for 'The Ibis' on the birds of Vladivostock, whence he had recently received an important collection, and an Illustrated Monograph of the Thrushes, to which he had devoted much time and attention for many years, was nearly ready for publication.

Henry Seebohm was the author of 71 memoirs and papers which have appeared in this Journal since 1876. A few other products of his pen will be found in the 'Proceedings of the Zoological Society,' 'The Zoologist,' and in other periodicals. The following is a list of his separately published works :—

1. *Siberia in Europe : a visit to the Valley of the Petchora, in North-east Russia, with descriptions of the Natural History, Migration of Birds, &c.* 8vo. London, 1880.
2. *Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. Cichlomorphæ : Part II., containing the Family Turdidæ.* Vol. V. 8vo. London, 1881.
3. *Siberia in Asia : a Visit to the Valley of the Yenesay in East Siberia. With Descriptions of the Natural History, Migration of Birds, &c.* 8vo. London, 1882.
4. *A History of British Birds, with Coloured Illustrations of their Eggs.* Text 3 vols. ; plates 1 vol. Royal 8vo. London, 1883–85.
5. *The Geographical Distribution of the Family Charadriidæ, or the Plovers, Sandpipers, Snipes, and their Allies.* 4to. London, 1887.
6. *The Birds of the Japanese Empire.* Royal 8vo. London, 1890.
7. *The Classification of Birds : an Attempt to Diagnose the Subclasses, Orders, Suborders, and some of the Families*

of Existing Birds. 8vo. London, 1890. Supplement to ditto. 8vo. London, 1895.

8. The Geographical Distribution of British Birds. 8vo. London, 1893.

9. Address to the Yorkshire Naturalists' Union, Skipton, 1893. 8vo. London, 1893.

Lieut. H. E. BARNES, F.Z.S.—Those of our readers who are interested in the ornithology of India will regret to hear of the death of Lieut. H. E. Barnes, author of that useful handbook 'The Birds of Bombay,' and of a valuable series of papers entitled "Nesting in Western India," which appeared, with excellent illustrations drawn by himself, in the 'Journal of the Bombay Natural History Society.'

Barnes was born at Oxford in 1848, and received his education at the University School there. His father apprenticed him to a cabinet-maker, but he ran away to Reading and tried to enlist in the Royal Engineers. Not being up to the required measurements, he joined the 2nd Queen's, and went with them to Aden in 1866, where he served as regimental schoolmaster for two years. He joined the Commissariat Department in 1870, and served in the Afghan War in 1879-80, after which he obtained his commission.

For the last twenty years Lieut. Barnes has been an active collector of eggs and birds'-skins, especially while he was stationed at Aden, Deesa, Mount Abu, Sind, Neemuch, Saugor, Poona, and Bombay. He leaves behind him a valuable collection—consisting of several thousand eggs of 767 species, mostly in clutches, together with a complete catalogue and carefully prepared notes, as to when and where the eggs were taken. The collection also includes 382 skins of Indian birds.

Barnes will be known to all readers of 'The Ibis' by the excellent article on the birds of Aden published in this Journal for 1893.

ROBERT BROWN.—Dr. Robert Brown, who was born in Scotland in 1842, and died in October last, was a well-known traveller in the Arctic Regions, North and South America, and elsewhere. He was also a geographer of high qualifications, and an industrious writer in journals and magazines. Amongst the 30 volumes and a large number of articles and reviews of which Dr. Brown was the author, one only, so far as we know, relates expressly to ornithology, that is, his "Synopsis of the Birds of Vancouver Island," published in 'The Ibis' for 1868, which contains a full summary of our knowledge of the avifauna of that island, as it stood at that period.

THOMAS HENRY HUXLEY.—We are unwilling to close our sad Obituary for 1895 without reference to the death of Professor Huxley, which took place on the 20th of June last. It is not necessary here to recapitulate the events of Huxley's life, which have been published in all the newspapers and journals *, nor to repeat the praises of his career, which are in everybody's mouth. But ornithologists must not forget that at least two of the most important and epoch-marking papers that he ever wrote related to our special branch of zoological science. When Huxley came to the Class of Birds in the course of his lectures at the Royal College of Surgeons, he was asked by the writer of this notice how he meant to classify them. His well-remembered reply was that he intended to treat birds as "extinct animals," and arrange them solely by their skeletons, as being the most enduring parts of their organic structure, and as having been hitherto much too little attended to. The result of Huxley's studies was, as we all know, a re-arrangement of birds on entirely new principles. Huxley quickly discovered that the various modifications of the cranial bones which are found in the class "Aves" had been unaccountably neglected by previous students. Mainly on these variations he founded the

* See (for such information) "Thomas Henry Huxley," 'Nature,' vol. lli. p. 226 (1895).

celebrated memoir on the Classification of Birds *, which he brought before the Zoological Society on the 11th April, 1867. This memoir, we need hardly say, effected a complete revolution in the hitherto generally adopted arrangement of birds. Some of Huxley's conclusions have, no doubt, been modified by the subsequent work of Parker, Garrod, Forbes, Fürbringer, and others. But the great value of cranial characters in the arrangement of birds remains almost unimpaired to the present day, and is fully recognized by all the leading systematists.

Huxley's second great Bird-paper was brought before the Zoological Society in May of the following year (1868), and related to the characters and distribution of the *Gallinæ* † and their relatives. The division, then first suggested, of the typical *Gallinæ* into "*Peristeropodes*" and "*Alectoropodes*," has been agreed to and adopted by all subsequent authorities. Here, too, Huxley left his mark, as he did on every subject which he handled. Of no one may it be more truly said, "*Nihil tetigit, quod non ornavit.*"

* "On the Classification of Birds; and on the Taxonomic Value of the Modifications of certain of the Cranial Bones observable in that Class," P. Z. S. 1867, pp. 415-472.

† "On the Classification and Distribution of the *Alectoromorphæ* and *Heteromorphæ*," P. Z. S. 1868, pp. 294-319.

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XIV.—*Notes on the Ornithology of the Barberton District of the Transvaal.* By PERCY RENDALL, M.D., F.Z.S.

THESE notes relate to a collection I made during a stay of fifteen months in this portion of South Africa. The birds were obtained within a 20-mile radius of the township of Barberton, with the exception of some I got in the bush-country between the Sabi and Crocodile Rivers, west of the Lebombo range, which divides Mozambique from the Transvaal. The majority of the species were shot while I was living with Mr. W. A. Caldecott at Fever Creek, which is a tributary stream of the Queen's or Lompagwana River. Barberton and its immediate neighbourhood are more singularly barren of bird-life than any spot I have visited; and this may be ascribed to the reckless disforestation practised during the "gold boom" in 1885-6, to supply the wants of the batteries and the large population then resident in the vicinity.

The paucity of species in my list is accounted for by the fact that my professional duties involved long and almost daily journeys on horseback over very rough country, so that it was often impossible for me to carry a gun. If I had not been obliged to subordinate ornithology to other matters, I feel sure that the number of species might have been doubled, especially by research along the numerous river-beds.

1. SERPENTARIUS SECRETARIUS, Layard & Sharpe, B. S. Afr. p. 8.

This handsome species was not uncommon on the flats round Barberton. There is a fine for shooting Secretary-Birds in the Transvaal, on account of their snake-eating tastes, but, from what I could learn, young game-birds, lizards, and small animals formed their usual diet, especially the first-named. I always saw them in pairs, and though I was generally on horseback, they seldom allowed me to get within 50 yards. They ran rapidly away, and did not take flight; in retreating, the crest is lowered, while the head and neck are depressed and stretched forward parallel to the ground. The leisurely stalk is not resumed until about 150 yards have been placed between you.

2. CIRCUS PYGARGUS, L. & S., B. S. Afr. p. 12.

A male was shot with a chicken in its talons, on 15th January.

3. ASTUR TACHIRO, L. & S., B. S. Afr. p. 20.

On 20th February a female was obtained.

4. BUTEO DESERTORUM, L. & S., B. S. Afr. p. 30.

A female was shot on 20th November.

5. LOPHAËTUS OCCIPITALIS, L. & S., B. S. Afr. p. 41.

On 11th September I got one which was perched on the fence of a fowl-yard; its depredations had been considerable, and it was too wary for a shot-gun.

6. BUBO LACTEUS, L. & S., B. S. Afr. p. 71.

I shot this Owl at Honey-bird Creek, where I was looking for koodoo. I killed it with a Martini rifle; it was sitting on a big tree in broad daylight, quite concealed by its foliage.

7. BUBO MACULOSUS, L. & S., B. S. Afr. p. 73.

Many times I tried to shoot one of these Owls, but it was too wary; eventually I caught it with a rat-gin set on the top of one of the posts of a deserted five-stamp battery at Fever Creek, which was one of his favourite perches.

8. *CARINE PERLATA*, L. & S., B. S. Afr. p. 77.

This bird I got on the Sabi flats on 27th March; it was being mobbed by a number of little birds in a mimosa-tree.

9. *STRIX FLAMMEA*, L. & S., B. S. Afr. p. 82.

This bird was brought to me on 24th January; it had been caught alive in a ruined house.

10. *CAPRIMULGUS LENTIGINOSUS*, L. & S., B. S. Afr. p. 87.

At dusk on 27th June I shot a female, and no other species of Nightjar did I obtain. Does the pectination of the inner edge of the middle toe-nail of this and other species of birds afford a relic of evolutionary progress?

11. *CORACIAS GARRULA*, L. & S., B. S. Afr. p. 102.

A single specimen from the Makongwa range (6000 feet) behind Barberton.

12. *CORACIAS CAUDATUS*, L. & S., B. S. Afr. p. 104.

This bird was occasionally noticed on the topmost boughs of trees, but it is at all times wary and hard to approach. A male was skinned on 9th June.

13. *HAPALODERMA NARINA*, L. & S., B. S. Afr. p. 106.

The only specimen I obtained was on that portion of the Makongwa range locally known as "Moodie's Concession."

14. *ALCEDO SEMITORQUATA*, L. & S., B. S. Afr. p. 107.

On 30th May I obtained a male.

15. *HALCYON ALBIVENTRIS*, L. & S., B. S. Afr. p. 115.

A pair shot on 21st and 29th May respectively. Their stomachs were full of large gryllidæ.

16. *UPUPA AFRICANA*, L. & S., B. S. Afr. p. 134.

Several times previously, when riding past a particular spot, I had seen a Hoopoe, and on 5th July, after a prolonged chase, I shot this male, sitting upon a tree. It was in the middle of its moult, and its stomach contained hard-shelled larvæ.

17. *IRRISOR VIRIDIS*, L. & S., B. S. Afr. p. 137.

A female, which was in company with three others, was shot on 10th June. The harsh alarm-notes were uttered as the birds

moved restlessly from tree to tree. The remains of a caterpillar and some coleoptera were found in the stomach.

18. *TURACUS CORYTHAIX* (Wagl.); Shelley, Cat. B. xix. p. 440.

Generally seen in pairs, but is uncommon, save in the low tsetse-fly country beyond Honey-bird Port. On the 4th August I procured a male.

19. *COCCYSTES HYPOPINARIUS*, L. & S., B. S. Afr. p. 158.

The only specimen of this bird which I saw was one shot on 6th November.

20. *CENTROPUS NATALENSIS*, L. & S., B. S. Afr. p. 163.

Though it is more than probable that the common species is to be found along the De Kaap watershed, yet I never handled it. A female of *C. natalensis* was shot on 6th June.

21. *INDICATOR MAJOR*, L. & S., B. S. Afr. p. 168.

While hunting large game with my friend Mr. W. A. Caldecott in the Sabi flats infested by tsetse-fly, we had to thank this little bird for many a good feast of honey-comb, especially in the neighbourhood of the Matiwamba Creek. I never met with a single instance in which this bird led any of my friends or their natives to aught save a bees'-nest. In my experience—or, more accurately, opinion—stories of people being led to snakes, leopards, wild cats, &c., are readily accounted for by the chance that may attend anyone making a "bee-line" through country where all wild animals are plentiful. The thrilling hair-breadth escapes that I heard of were based on hearsay evidence or were of native origin.

22. *POGONORHYNCHUS TORQUATUS*, L. & S., B. S. Afr. p. 172.

I got two males of this Barbet: one on 12th June, and the second, though five weeks later, was from the same spot, on the banks of the Lompagwana River. Both were feeding on the fruit of a wild fig-tree, with the seeds of which their stomachs were filled.

23. *POGONORHYNCHUS LEUCOMELAS*, L. & S., B. S. Afr. p. 173.

This bird has a knack of frustrating your stealthy advances

towards antelope by perching on the topmost twigs of trees in front of you to utter its loud call-note : a practice which has a wearing effect on the sportsman's temper, since the game recognize its purport !

24. *DENDROPICUS CARDINALIS*, L. & S., B. S. Afr. p. 190.

A female on 21st May and a male three weeks later. Both birds were shot in a densely-wooded kloof, and the loud tapping they made on the tree-trunks as they fed resounded through the prevailing stillness.

25. *TURDUS LITSITSIRUPA*, L. & S., B. S. Afr. p. 198.

This was obtained on two occasions, when it came to feed on the insects driven out by grass-fires on 31st May and 10th June. Both the birds which I skinned were males, and members of a party barely numbering half a dozen.

26. *PYCNONOTUS LAYARDI*, Gurney ; Sharpe, Cat. B. vi. p. 132.

One female only was obtained at Fever Creek on 5th July, but the species, though sparingly distributed, was not uncommon.

27. *CRATEROPUS JARDINII*, L. & S., B. S. Afr. p. 212.

From a party of six birds on 2nd August I shot a female. Their alarm-note is harsh and clattering, and it is astonishing, as one after another they join in the chorus, what a noise a few birds can produce. I found large grasshoppers in the stomach. The irides had an outer ring of deep orange that merged into bright yellow at the papillary margin.

28. *COSSYPHA HUMERALIS*, L. & S., B. S. Afr. p. 228.

I collected three of these birds, two males and a female, on 26th March, 2nd June, and 12th July respectively. The latitude of Barberton is $26^{\circ} 40'$, which corresponds with Sir Andrew Smith's observations as to its geographical range, "North of 26° ." The iris was hazel, and the stomach contained insects.

29. *MYRMECOCICHLA BIFASCIATA*, (Temm.); Seebohm, Cat. B. v. p. 355.

On 22nd April I shot a male at the bottom of a rocky donga perching on large boulders. It was in full moult, and its stomach was filled with black ants.

30. *THAMNOBIA CINNAMOMEIVENTRIS*, L. & S., B. S. Afr. p. 232.

Out of a party of eight birds on 6th July I shot a male.

31. *SAXICOLA GALTONI*, L. & S., B. S. Afr. p. 234.

The stomach of a female I shot on 12th June contained a grasshopper.

32. *PRATINCOLA TORQUATA*, L. & S., B. S. Afr. p. 250.

An immature male was obtained on 15th June. Its beak, tarsus, and feet were black, and its stomach was full of black ants.

33. *PRINIA MYSTACEA*, L. & S., B. S. Afr. p. 258 and p. 822.

On 10th July a male which I shot had a steel-grey bill. The iris was bronzy yellow. Tarsus and feet flesh-coloured. Its stomach contained small grass-seeds.

34. *CISTICOLA ABERRANS*, L. & S., B. S. Afr. p. 271.

Common, and everywhere in evidence amongst low grass and bushes. I shot one on 3rd July.

35. *SPHENŒACUS AFRICANUS*, L. & S., B. S. Afr. p. 280 and p. 824.

On 16th April a male was procured with the crop and stomach full of grass-seeds. This was probably the subspecies that Captain Shelley distinguishes as the Transvaal form, *S. natalensis*. It was far advanced in moult. Beak and legs were of a dark steely grey.

36. *ACROCEPHALUS TURDOIDES*, L. & S., B. S. Afr. p. 289 and p. 826.

I got one on 17th February: possibly an extension of its geographical distribution more widely than is generally known.

37. *CINNYRIS AFER*, L. & S., B. S. Afr. p. 313.

I have notes of these birds taken on 26th March and 4th August in widely separated localities, both situated more than 3000 feet above sea-level.

38. *CINNYRIS CHALYBEUS*, L. & S., B. S. Afr. p. 314.

One specimen I obtained on 4th August from the Makongwa range at more than 4000 feet elevation.

39. *CINNYRIS AMETHYSTINUS*, L. & S., B. S. Afr. p. 315.

In the Bonanza Valley I got a male on 22nd April.

40. *CINNYRIS TALATALA*, L. & S., B. S. Afr. p. 318.

One male was shot at Fever Creek on 30th June.

41. *ZOSTEROPS VIRENS*, L. & S., B. S. Afr. p. 325.

On 10th July I procured a male. Its bill and legs were dark steel-grey. Iris grey exteriorly, with a pupillary margin hazel in coloration.

42. *PARUS NIGER*, L. & S., B. S. Afr. p. 331.

A male shot on 3rd July had its irides dark hazel, bill and legs blue-black. The stomach contained hard-shelled larvæ.

43. *TERPSIPHONE PERSPICILLATA*, L. & S., B. S. Afr. p. 352.

At Fever Creek on 26th March I shot a male.

44. *LANIUS COLLARIS*, L. & S., B. S. Afr. p. 374.

From Fig-tree Creek I got a female on 23rd June.

45. *LANIUS SUBCORONATUS*, L. & S., B. S. Afr. p. 377.

The fact that I took a male of this species on the 23rd April serves to prove that it occurs side by side with the foregoing bird. Its stomach contained coleoptera and hard-shelled insects.

46. *DRYOSCOPIUS CUBLA*, L. & S., B. S. Afr. p. 392.

A pair were shot on 15th June. Irides brilliant orange-red. Bill—upper mandible black, lower steely grey. Legs steel-colour. The stomach of the male contained various small insects, that of the female a large mantis.

47. *DRYOSCOPIUS RUFIVENTRIS* (Sw.); Gadow, Cat. B. viii. p. 134.

One male only was obtained on 4th July: its food proved to have been orthoptera.

48. *TELEPHONUS ERYTHROPTERUS*, L. & S., B. S. Afr. p. 394.

On 12th July one specimen was procured.

49. *TELEPHONUS SENEGALENSIS*, L. & S., B. S. Afr. p. 394.

A male on 30th May and another six weeks later. In the stomach were noticed seeds and insects.

50. *BRADYORNIS ATER*, L. & S., B. S. Afr. p. 405.

I got a female on 12th June.

51. *PRIONOPS TALACOMA*, L. & S., B. S. Afr. p. 406.

Two females on 5th and 9th June. The stomach of the first contained a mantis. Bill black; iris light yellow, orange-coloured wattling round the eyes; legs flesh-coloured.

52. *SIGMODUS TRICOLOR*, L. & S., B. S. Afr. p. 407.

On 16th July a male was shot; its stomach contained orthoptera. The bill was red. Iris bright yellow. Red pectinated wattling round the eyes. Legs and feet were of a sealing-wax red.

53. *BUCHANGA ASSIMILIS*, L. & S., B. S. Afr. p. 408.

A male which was hawking for grasshoppers was shot on 29th May at Fig-tree Creek.

54. *ORIOULUS LARVATUS*, L. & S., B. S. Afr. p. 413.

One of these birds I found in Rimer's Creek on 20th August.

55. *HETEROCORAX CAPENSIS*, L. & S., B. S. Afr. p. 415.

One pair of these birds, which were extremely shy, frequented a farm in the centre of the Barberton flats, halfway to the Kantoor. They never allowed me to get within shot, even on horseback.

56. *CORVUS SCAPULATUS*, L. & S., B. S. Afr. p. 416.

Only on rare occasions did I see this species; the 4th August is the only note I made of its appearance.

57. *BUPHAGA AFRICANA*, L. & S., B. S. Afr. p. 418.

I got one male out of a party of six birds that flew off the backs of some trek-oxen which were feeding at a drift of the Lompagwana River, where they had been outspanned. This was on 30th May.

58. *VIDUA PRINCIPALIS*, L. & S., B. S. Afr. p. 453.

Common, and locally known as the Kaffir Fink. One male in nuptial dress was shot on 25th November. The birds congregate in large flocks after breeding, when the males lose their long tail-feathers and assume their duller garb.

59. *CHERA PROGNE*, L. & S., B. S. Afr. p. 458.

This species is common on the flats round Barberton. To the natives it is the "Sakubula," and the large black tail-feathers are used in bunches by the Swazi "Regiment of Imfaaus" (or young men) to adorn their head-dresses and shields, with great effect. The natives run the birds down on wet days, when the moisture prevents them from rising after a flight or two, and they are killed with sticks and knobkerries.

60. *PYROMELENA MINOR* (Reichenb.); Sharpe, Cat. B. xiii. p. 238.

The only one I got was on 4th August.

61. *ESTRILDA DUFRESNII*, L. & S., B. S. Afr. p. 469.

One obtained on 30th April had its crop full of grass-seeds.

62. *ESTRILDA ASTRILD*, L. & S., B. S. Afr. p. 470.

Two birds were shot on 6th June out of a flock of about thirty.

63. *LAGONOSTICTA BRUNNEICEPS*, L. & S., B. S. Afr. p. 476.
One specimen on 28th March.64. *CRITHAGRA RENDALLI*, Tristram, Ibis, 1895, p. 130 and p. 379.

Examples of this species were shot on 17th February, 1894.

The males and females were together in a large flock, but were obtained with some difficulty, since I happened that day to be riding a particularly gun-shy horse, which reared and backed when I fired, and almost refused to let me remount with the gun in my hand. This proved all the more troublesome as the birds were wild and had to be repeatedly followed over the open flats before I could obtain both sexes.

65. *EMBERIZA FLAVIVENTRIS*, L. & S., B. S. Afr. p. 491.

The colonial Dutch name for this bird is "Strep-kopje" (or Striped-head). A male was shot from a tree on 2nd July. Iris hazel; legs and feet yellowish brown; stomach full of small seeds.

66. *MIRAFRA AFRICANA*, L. & S., B. S. Afr. p. 519.

On 17th February a male was shot on the Barberton plain.

67. *MACRONYX CROCEUS*, L. & S., B. S. Afr. p. 532.

As this bird circles down and alights with outstretched wings, the tail is also spread and the white rectrices are very noticeable. It has a short and rather pleasing song whilst on the wing.

68. *ANTHUS LINEIVENTRIS*, L. & S., B. S. Afr. p. 540.

On 6th July a female of this species was collected.

69. *MOTACILLA VIDUA*, L. & S., B. S. Afr. p. 545.

These birds were always seen in pairs near running water. Iris hazel, tarsi and feet black.

70. *COLIUS STRIATUS*, L. & S., B. S. Afr. p. 555.

The colonial name for this species is the "Mouse-bird"—why I know not, but presume the decomposed feathers of the breast are responsible for the simile. The stomach of a male shot on 29th May contained oval seeds.

71. *TRERON DELALANDEI*, L. & S., B. S. Afr. p. 558.

This bird was both scarce and wild; it pitches, like most Pigeons, on the very topmost twigs of the trees on which it alights.

72. *TURTUR CAPICOLA*, L. & S., B. S. Afr. p. 567.

The crop and stomach of a male I shot were full of seeds.

73. *TURTUR SENEGALENSIS*, L. & S., B. S. Afr. p. 568.

A male shot on 14th June had the irides dark hazel, the tarsus and feet dark red.

74. *CHALCOPELIA AFRA*, L. & S., B. S. Afr. p. 570.

I got a male of this Dove on 30th May; this and the two foregoing species were all of them from Fever Creek.

75. *NUMIDA CORONATA*, L. & S., B. S. Afr. p. 581.

This species I only met when hunting large game in the thorn-veldt, between the Sabi and Crocodile Rivers. Whenever we got the chance we shot the birds of the year, as they are particularly good eating.

76. *GUTTERA EDOUARDI* (Hartl.); Grant, Cat. B. xxii. p. 382.

I saw birds of this species alive near Barborton, but I am almost certain that they had been imported from Delagoa Bay, since, to my knowledge, the natives there used to bring them alive to sell in Lorenzo Marqués, in the neighbourhood of which settlement they must be common.

77. *FRANCOLINUS CLAMATOR*, L. & S., B. S. Afr. p. 591.

Both this species and the following are indifferently known as "Bush Pheasants." I have seen them running along bridle-paths near thick bush, into which they betake themselves at the very first alarm.

78. *FRANCOLINUS SUBTORQUATUS*, L. & S., B. S. Afr. p. 600.

Found in more open spots, but very difficult to flush without a good dog. It is excellent eating, as, indeed is every Francolin which I have yet shot.

79. *COTURNIX COTURNIX*, L. & S., B. S. Afr. p. 603.

It was generally during February that some one would suddenly come into camp with the intelligence that "the Quail have come." They were seldom to be shot in any numbers, save for, roughly speaking, one month after their arrival, when they used to depart, as they came, by night.

80. *CREX CREX*, L. & S., B. S. Afr. p. 611.

One specimen was obtained on 26th December.

81. *OTIS KORI*, L. & S., B. S. Afr. p. 632.

In the tsetse-fly country, between the Sabi and Crocodile Rivers, we saw a grand specimen of this bird, but we were after blue wildebeest, and therefore did not fire at it.

82. *OTIS LUDWIGI*, L. & S., B. S. Afr. p. 636.

On several occasions I saw this bird when I was riding across the Barborton plain without a gun; when I rode towards

it, it ran quickly away, but did not take flight. It is locally known as the "Paauw."

83. OTIS SCOLOPACEA, L. & S., B. S. Afr. p. 637.

Locally known to colonists as the Silent Korhaan; this latter word being the Dutch synonym for Bustard. The species was noticed sparingly near wooded dongas on the Barberton flats, and especially on a large farm belonging to my friend Mr. Edward Bourhill.

84. OTIS AFROIDES, L. & S., B. S. Afr. p. 642.

Very vociferous when it is flushed; it has the sobriquet of the Noisy Korhaan. On Mr. Bourhill's farm we shot it (and also *Francolinus subtorquatus*) on the summits of low rolling grassy spurs, not far from cover.

85. PARRA AFRICANA, L. & S., B. S. Afr. p. 648.

I missed a bird which I fancied was *Anas sparsa* and killed a *Parra* on a vlei in the Sabi flats; upon walking round the pool to pick up this bird I came upon the spoor of two black rhinoceroses that had drunk at this vlei but a short time before.

86. VANELLUS SPECIOSUS, L. & S., B. S. Afr. p. 679.

One female was shot on 1st January.

87. RHYNCHÆA CAPENSIS, L. & S., B. S. Afr. p. 679.

Only once seen on the banks of the North Kaap River.

88. SCOPUS UMBRETTA, L. & S., B. S. Afr. p. 725.

The colonial Dutch name for this bird is the "Podda Vanger," which alludes to its well-known taste for batrachians. A bird which I shot feeding in the stream which runs through Fever Creek had a large number of small leeches in its stomach.

Fort Johnston, Nyasaland,
12th Sept., 1895.

XV.—On a Collection of Birds from Mount Chiradzulu, in the Shiré Highlands, Nyasaland. By Capt. G. E. SHELLEY, F.Z.S. With prefatory Remarks by P. L. SCLATER.

(Plate IV.)

[MOUNT Chiradzulu is described in Capt. Sclater's "Routes and Districts in Southern Nyasaland" (Geogr. Journ. 1893, p. 403) as "a striking mountain, rising to a level ridge about two miles long, which runs north and south to an elevation of nearly 5000 feet. The upper slopes are well forested, and watered by numerous small streams." Chiradzulu will be found marked in Capt. Sclater's map, attached to that paper, a little to the right of the main route between Blantyre and Zomba.

Amongst the collections lately received from Sir H. H. Johnston, K.C.B., H.B.M. Commissioner, is a small series of birds from this mountain, obtained by Mr. Alexander Whyte, who visited it in July last. It contains about 40 specimens, which, as kindly determined by Capt. Shelley, are referable to 27 species. Of these three are new to science; and one of them is a very distinct and beautiful Oriole with a bright green head; another is a closely allied representative of a species lately described from the neighbouring mountain Milanji; while the third is a southern form of the rare genus *Cryptospiza*, hitherto known only from the mountains of Camaroons and Shoa.

Along with this Chiradzulu collection Sir H. H. Johnston sends a fine specimen of *Gypohierax angolensis* in its white adult plumage from Lake Nyasa, and a Bustard (*Otis melanogaster*) from the plains of Zomba. Neither of these birds, the sender informs me, was previously known to occur in these respective localities.—P. L. S.]

1. ACCIPITER MINULLUS.

Accipiter minullus (Daud.); Sharpe, B. S. Afr. pp. 23, 796; id. Cat. i. p. 140; Sclat. Ibis, 1864, p. 306.

A single female of this tiny Sparrow-Hawk.

2. *HAPALODERMA VITTATUM*.

Hapaloderma vittatum, Shelley ; Grant, Cat. xvii. p. 480, pl. 16.

A single female of this rare Trogon. Its occurrence in Nyasaland extends its hitherto known range south by more than 10° lat.

This species is the type of *Heterotrogon*, Richmond, Proc. U. S. Nat. Mus. xvii. p. 601 (1895), where a full description of the female plumage will be found. The female differs from the male very much as in *H. narina*.

3. *BYCANISTES CRISTATUS*.

Bycanistes cristatus (Rüpp.) ; Sharpe, B. S. Afr. p. 126 ; Kirk, Ibis, 1864, p. 326 ; Grant, Cat. xvii. p. 417.

A male of this Hornbill.

4. *MELANOBUCCO ZOMBÆ*.

Melanobucco zombæ, Shelley, Ibis, 1893, p. 10 ; 1894, pp. 8, 467.

A single female of this Barbet, as yet known only from Nyasaland.

5. *BARBATULA EXTONI*.

Barbatula extoni, Layard ; Sharpe, B. S. Afr. pp. 176, 811 ; Shelley, Cat. xix. p. 43.

One male of this species.

6. *BARBATULA BILINEATA*.

Barbatula bilineata (Sundev.) ; Sharpe, B. S. Afr. p. 176 ; Shelley, Cat. xix. p. 44, pl. 3. fig. 2.

A female of this Barbet.

This species, as well as the last, is now recorded for the first time from north of the Zambesi.

7. *TURDUS GURNEYI*,

Turdus gurneyi, Hartl. ; Shelley, Ibis, 1893, p. 13 ; 1894, pp. 9, 468.

Two males and a female of this rare Thrush, already recorded from Mount Zomba and Mount Milanji.

8. *CRINIGER FLAVOSTRIATUS*.

Andropadus flavostriata, Sharpe, B. S. Afr. p. 206.

Xenocichla flavistriata, Sharpe, Cat. vi. p. 100.

A single specimen, sex undetermined.

9. *CRINIGER PLACIDUS*.

Xenocichla placida, Shelley, Ibis, 1894, p. 10.

A female of this species was obtained.

10. *CRINIGER OLIVACEICEPS*, sp. n.

Very similar to *C. milanjensis*, Shelley, Ibis, 1894, p. 9, pl. 1. fig. 1, in size, form, and general appearance; but brighter, and readily distinguished by the entire top of the head from the bill backward being uniform olive-yellow of the same shade as the remainder of the upper parts, and by the absence of any white over the eye; ear-coverts and eyelids brownish slate-colour, the former with white shaft-stripes; under surface of the body pale olive, strongly washed with yellow; under wing-coverts yellow; inner margins of the quills yellowish buff; bill horny black, legs slaty brown. Total length 8 inches, culmen 0·7, wing 3·7, tail 3·8, tarsus 0·95.

Hab. Mount Chiradzulu.

It is interesting to find that two mountains of the Shiré Highlands are each tenanted by a representative form of *Criniger*. The present collection contains a single female specimen of this species, which is fortunately in good condition.

11. *MONTICOLA ANGOLENSIS*.

Monticola angolensis, Sousa, Jorn. Lisb. 1888, pp. 225, 233.

Monticola brevipes, Sharpe, B. S. Afr. p. 221, pt. (Benguela).

One female specimen.

This species chiefly differs from *M. brevipes* in the somewhat irregular black mottling on the back; a character which, not unnaturally, suggested the idea that this form might be only the young plumage of *M. brevipes*. The present specimen—as well as five others in the British Museum from Benguela—differs in the same manner from all the more

southern specimens, so there can, I consider, be no doubt that *M. angolensis* is a good species. The line of 16° S. lat. may be taken as the boundary-line which separates the range of these two closely-allied forms.

12. *COSSYPHA CAFFRA*.

Cossypha caffra (Linn.); Shelley, Ibis, 1893, p. 14.

One female.

13. *THAMNOLÆA SUBRUFIPENNIS*.

Thamnolæa subrufipennis, Reichen.; Shelley, Ibis, 1894, p. 11.

A single male.

14. *BRADYPTERUS NYASÆ*.

Bradypterus nyassæ, Shelley, Ibis, 1893, p. 16; 1894, p. 12.

Three specimens.

15. *CAMAROPTERA OLIVACEA*.

Camaroptera olivacea (Vieill.); Sharpe, Cat. vii. p. 166.

Camaroptera brachyura, Sharpe, B. S. Afr. pp. 294, 827.

One specimen.

16. *CINNYRIS FALKENSTEINI*.

Cinnyris falkensteini, Reichen.; Shelley, Ibis, 1893, p. 16; 1894, p. 13.

A male in full adult plumage.

17. *CYANOMITRA OLIVACEA*.

Cinnyris olivaceus (Smith); Sharpe, B. S. Afr. p. 110; Gadow, Cat. ix. p. 78.

A pair of this species.

18. *ZOSTEROPS ANDERSSONI*.

Zosterops anderssoni, Shelley, Bull. B. O. C. i. p. v (1893); Ibis, 1893, p. 118.

Zosterops senegalensis (nec Bp.), Sharpe, B. S. Afr. pp. 325, 834; Gadow, Cat. ix. p. 181.

One male of this *Zosterops*. It is with pleasure that I meet with this species from Nyasaland, as the specimen fully bears out the characters upon which I separated it from its more northern ally *Z. senegalensis*, in being paler and having a longer wing (2.35).

19. *ALSEONAX ADUSTA*.

Muscicapa undulata (nec Gm.); Sharpe, B. S. Afr. pp. 339, 837.

Alseonax adusta (Boie); Sharpe, Cat. iv. p. 129.

One female specimen, which is paler, slightly more ashy, and has the striping of the throat less marked than any of the many specimens in the British Museum, all from Africa south of the Zambesi.

20. *TARSIGER JOHNSTONI*.

Pogonocichla johnstoni, Shelley, Ibis, 1893, p. 18; 1894, p. 14.

One young bird of this species, and two specimens from Milanji obtained in October. When I sent to press the portion of my "List of the Birds of Africa" containing the genus *Tarsiger*, I was unfortunately persuaded that the present species was identical with *T. orientalis*, Reichen., but I think the following key (based upon 4 or more adult specimens of both species) will show that such is not the case:—

- a. Dark terminal band of tail narrower; yellow reaching on all but the centre tail-feather to within 0·4 inch of the tip (culmen 0·55).
 - a'. Secondaries edged with clear grey, with rarely any trace of olive margins 1. *stellatus*.
 - b'. Secondaries entirely edged with olive-yellow .. 2. *johnstoni*.
- b. Dark terminal band of tail broader; yellow reaching on all but the centre tail-feather not nearer than 0·8 inch from the tip (culmen 0·55) 3. *orientalis*.

The young bird is, I think, worth describing in conjunction with two immature birds in the British Museum, labelled *T. stellatus*, ♂, East London, June (F. A. Barratt), and *T. orientalis*, ♂, Kilimanjaro, August (H. C. V. Hunter).

T. stellatus.—Upper parts uniform olive-green, with a little chrome-yellow on the upper tail-coverts. Tail: two centre feathers, the inner web of the next pair, and the outermost web of the tail dark brown; remainder of the tail brownish yellow, duller towards the ends of the feathers, and the dark terminal band of the adult only present on the third pair

of feathers from the centre. Under surface nearly uniform buffish yellow, paler on the chin, cheeks, and upper throat, brighter on the lower throat, slightly shaded with olive on the crop and sides of the body, and passing into white down the centre of the abdomen; ear-coverts ashy olive, with ill-defined yellowish shaft-stripes; wing dark brown with ashy-olive edges to the feathers above; under wing-coverts whitish yellow, pale inner margins of the quills almost white.

T. johnstoni, ♀, July.—Similar to the last, but differs in having a few terminal spots of buffish chrome, with partial black edges scattered over each series of wing-coverts; feathers of the sides of the throat, of the whole crop, and sides of the body with broad olive edges; tail rather brighter, and with the pattern the same as in the adult, but with the terminal dark bar decidedly narrower.

T. orientalis.—Differs in having most of the feathers of the top and sides of the head with shaft-stripes, widening towards their ends, of rich ochre-buff with partial jet-black edges; feathers of the upper back and many of the wing-coverts with similar, but much larger spots; the few yellow upper tail-coverts mostly tipped with black; the tail-feathers mostly with broad blackish edges and narrow dark ends, except one pair, which has the end third uniform blackish brown.

It is probable that each of these three species goes through similar phases of plumage, and that it is a young specimen of *T. orientalis* which has been described as *T. guttifer* (Reichen. Orn. Monatsb. 1895, p. 76), but I have not seen the type. The mottled plumage of the young, together with the rather long plain tarsus, shows, I consider, that *Tarsiger* belongs to the same subfamily as the Robins and Redstarts.

21. MALACONOTUS BLANCHOTI.

Laniarius poliocephalus (nec Licht.); Shelley, Ibis, 1894, p. 16.

Malaconotus blanchoti, Steph. Gen. Zool. xiii. p. 161, ex Levaill.

One male of this fine Bush-Shrike.



22. *ORIOLOUS CHLOROCEPHALUS*, sp. n. (Plate IV.)

Entire head and throat uniform bright sage-green; a broad collar, an inch wide, and the under surface of the body rich golden yellow; remainder of the upper parts mostly olive-green, a shade darker than the head; on the wings the green shades into blue-grey on the outer webs of the greater and primary coverts and the quills, and, with the exception of the innermost ones, the remainder of the quills greyish black, with very partially defined ashy inner margins. Tail: the four outer pairs of feathers with bright yellow ends, increasing regularly in breadth from 0.3 to 2 inches at the shaft of the outer feather; remainder of the feathers olive-green, with the quills and portion of the inner webs black, which latter colour is scarcely more pronounced on the upper surface. Under wing-coverts bright yellow, with a few of the larger ones mottled with olive, and the outer greater series white, with some dusky marks near the primary coverts. Bill pale reddish brown; legs apparently slaty grey. Total length 10 inches, culmen 1.1, wing 5.3, tail 4.3, tarsus 1.

This very remarkable Oriole, of which a single specimen marked ♀, apparently in full plumage, is in Mr. Whyte's collection, is distinguished from every other member of the genus by the following characters:—the green head, the sharply defined yellow collar round the back and sides of the neck, the olive back, and the mostly greyish-blue edges of the wing-feathers. It agrees with typical Orioles in form, size, and the reddish-brown colour of the bill, and its nearest ally I consider to be *O. nigripennis* of the Gold Coast.

In Africa the genus *Oriolus* is now represented by nine species, of which eight are confined to the Ethiopian Region, *O. galbula* being the only migrant.

23. *LAMPROCOLIUS SYCOBIUS*.

Lamprocolius sycobius (Licht.); Shelley, Ibis, 1893, p. 22; 1894, p. 19.

One specimen from Chiradzulu has many of the feathers brown, while two from Zomba, collected in June, are in the full metallic plumage which adult birds of this genus are supposed never to lose.

24. *AMYDRUS MORIO*.

Amydrus morio (L.); Shelley, Ibis, 1893, p. 22; 1894, p. 19.

One adult male. Mr. Whyte remarks that he found this species nesting in holes in the cliffs in July.

25. *SYCOBROTUS STICTIFRONS*.

Sycobrotus stictifrons (Fisch. & Reichen.); Shelley, Ibis, 1893, p. 22; 1894, p. 19.

One pair of this species.

26. *CRYPTOSPIZA AUSTRALIS*, sp. nov.

Cryptospiza reichenowi (nec Hartl.); Shelley, Ibis, 1894, p. 471.

General plumage dark brown, with a very faint olive shade, underpart generally slightly paler; rump, upper tail-coverts, and broad edges to the outer webs of the four innermost secondaries bright crimson; remainder of the back, the ends of the greater wing-coverts, and the flanks are slightly washed or mottled with crimson: bill black; legs dark brown. Total length 4·4 inches, culmen 0·45, wing 2·2, tail 1·8, tarsus 0·7, middle toe with claw 0·8, hind toe 0·5.

Hab. Shiré Highlands.

One of the females has a few minute crimson feathers at the gape, which are not present in the other two specimens.

27. *FRANCOLINUS JOHNSTONI*.

Francolinus johnstoni, Shelley, Ibis, 1894, p. 24; Grant, Cat. xxii. p. 559.

A single female specimen.

This species is interesting as a local form of *F. hildebrandti*, one of the common Francolins of the Masai district, ranging from the Equator to the Pangani River, while the present species is probably confined to Nyasaland, and is as yet known to occur only in the Shiré Highlands.

Mr. Ogilvie Grant first pointed out the fact that *F. hildebrandti*, Cab., J. f. O. 1878, pp. 206, 243, pl. 4. fig. 2, is the female of *F. altumi*, Fisch. & Reichen., J. f. O. 1884, p. 179, pl. 2, which is fully borne out by the specimens of *F. johnstoni* sent by Mr. A. Whyte with the sexes marked.

XVI.—*Birds'-nesting in and around Lucknow.*

By WILLIAM JESSE, La Martinière College, Lucknow, Oude.

FOR the ornithologist British India is a country in which there is still a vast amount of work to be done. The great Empire of the East is of such enormous extent, and comprises such wide differences of climate—from the snow-clad peaks of the Himalayas to the tropical districts of the Peninsula, from the arid plains of Sind to the moist jungles of Assam—that it would be an utter impossibility for the fauna to be similar throughout the area. Much has been accomplished during the last 50 years towards acquiring a knowledge of the bird-life in this portion of the globe, and the work of Hodgson, Jerdon, and Blyth, and later of Mr. A. O. Hume, not to mention many others, has been such that we have a wide knowledge of Indian ornithology in general; what is now wanted is a more detailed working-up of the various Provinces and Districts. This has been done admirably in many cases; notably by Messrs. E. W. Oates (Burma), W. V. Legge (Ceylon), H. E. Barnes (Bombay), and Murray (Sind), all of whom have published in book-form the results of their labours; but there are still many districts which, up to the present, have not been as thoroughly and systematically searched as those above mentioned. The birds of the North-west Provinces and of Oude have been so well studied by Messrs. Hume, R. M. Adam, and W. E. Brooks that I do not intend to attempt any description of the avifauna of the Provinces in general, but simply to record the results of my first eight months' birds'-nesting in the neighbourhood of La Martinière College, Lucknow. The area in which I have taken all my eggs is contained in a semicircle, with the College for a centre and a distance of three miles as a radius.

The climate of this part of India is, as is well known, divided into three distinct seasons: the cold weather, the hot weather, and the "rains." The cold weather begins about the middle of October and continues until about the middle or end of March, when the hot weather begins and lasts

until the "rains" break, an event usually occurring between the 15th and 20th of June.

There are eggs to be found in every month from January to December inclusive, but in the area mentioned the number found before February or after September is small.

La Martinière College stands in a mango-park of about 300 acres. Adjoining this is the Wingfield Park, a large well-kept space filled with trees and ornamental shrubs, and renowned amongst the College boys as a place for Bulbuls' nests, while further on are the Horticultural Gardens. To the east of the College flows the Goomti, in the banks of which scores of the Indian Sand-Martin and the Bank-Mynah have excavated their holes, and beyond this stretches a level sandy plain dotted here and there with clumps of mango and babool trees. The Oude and Rohilkund railway crosses the river at right angles, and traverses this plain on its way to Mogul Serai, and all along the sides of the line grow clumps of the tall sharp "patowal" grass, in which, during the rainy season, the Wren-Warblers weave their beautiful little nests.

During the earlier part of the cold weather there is not much to be found near the College. Out in the District the Vultures, Falcons, Hawks, and Owls are the principal breeders, but they hardly come quite so close to the city as three miles. Besides these, the Indian Sand-Martin (*Cotyle sinensis*), Indian Hoopoe (*Upupa nigripennis*), and two or three species of Dove are the chief birds to be found nesting before February. The White-backed Vulture (*Gyps bengalensis*) sometimes builds within a short distance of the College, but most pairs seem to nest well away from the city. In other parts of Upper India, however, this Vulture seeks the neighbourhood of man to breed, often building its nests on the trees situated in the native bazaars, where the birds find abundance of food for themselves and young.

Natives very rarely disturb or interfere with birds or their nests, and colonies of various species, Crows, Paddy-birds, Bayas, &c., are met with in and around almost every village. In February and March the eggs of the Kites, White

Scavenger-Vultures, Kingfishers, Paroquets, Woodpeckers, Barbets, Wire-tailed Swallows, Rollers, Nuthatches, Honey-suckers, Babblers, Bulbuls, Jungle-Crows, Minivets, and many others may be taken, and the nesting-season may be said to have fairly commenced. The House-Kite (*Milvus forinda*) breeds in large trees all over cantonments and civil lines, and its nest is a very conspicuous object.

Kites, as a rule, do not interfere when their nests are touched, but I knew of one pair that were an exception. In this case the birds were so bold that they knocked the cap off the head of a boy who happened to be passing the tree in which the nest was placed. Another boy tried to get the eggs, but one of the birds dashed at him when within a few feet of the nest, driving its claws through his clothes, and so startling him that he beat a hasty retreat. After that the nest was left undisturbed.

On two occasions, on going up to a Kite's nest, I found that one of the eggs had a hole in it, apparently made by the bird's beak or claw. Whether they were thus damaged by accident or from anger I cannot say. In one case the old bird sat very close on her single egg, which eventually proved to be quite rotten; the white of the egg with the mud of the nest had formed a cake over the hole, and presumably the bird was either unconscious of, or had quite forgotten, the damage done. Mr. A. O. Hume ('Nests and Eggs of Indian Birds') mentions similar cases in his articles on *Falco jugger* and *F. chicquera*.

The White Scavenger-Vulture (*Neophron percnopterus*), or, as the College boys call it, the White Hawk, has several nests in and around the station. Most of these are on ruins or private bungalows, and are consequently difficult to get. I only managed to examine three, and of these two were on trees. The first nest that I found was a collection of sticks, rags, dung, and putrefying skin, piled in the first fork of a very large mango, about 10 feet from the ground. In this evil-smelling mass lay two very richly-coloured eggs, which proved to be quite fresh. Both birds were by the nest, but on our approach they flew off, and, settling on the

ground about 20 yards from the tree, calmly watched the robbery of their possessions. I subsequently got a third egg from this nest, if anything, more handsomely marked than the others. Unfortunately I did not know the peculiarity of these eggs, and, as this one was very dirty, I commenced washing it with soap and water, scrubbing it with a nail-brush. To my great surprise and vexation, all one side and part of the other were quite spoilt, and I learned by experience—the most excellent of teachers—that, unless washed with the greatest care, these eggs lose much of their beautiful coloration. What the nature of the markings is I do not know, nor can I find any remarks as to its composition amongst the authorities on ornithology. The natives declare that it is blood.

One of the most beautiful nests to be found about this time is that of the Thick-billed Flower-pecker (*Piprisoma agile*). It is a beautiful little purse—hanging from a small branch in such a way that the wood makes a sort of rafter as it passes through the nest—and is made chiefly of down and spider's web, mixed with some vegetable fibre, which gives the whole structure a reddish-brown colour. One peculiarity of this nest is that it can be rolled up and unrolled again without losing its shape. The eggs remind me more of those of the European Grasshopper-Warbler than of any others with which I am acquainted, though of course they are smaller.

The nests of this species and of the Small Minivet (*Pericrocotus peregrinus*) are difficult to find, and the most successful method is to watch the birds, if they appear to be building. I cannot understand why Mr. Hume only mentions the months of June, July, and August as the breeding-time of this Minivet. I know the species well, having obtained nests, eggs, and birds, and this year, at any rate, no eggs were taken in Lucknow to my knowledge after the beginning of May; so I am surprised that Mr. Hume did not find them earlier.

The first nest with eggs of this species that I found was taken on April 9th, and a description of the discovery and subsequent taking of the nest may be of interest.

One morning towards the end of March I was walking with some of the College boys through a mango "tôp" on the look-out for nests, when we caught sight of a pair of "Rajah Lals," as the natives call these birds, flying about in the upper branches of one of the biggest mangoes. In a second I had my glasses on them, and, proceeding to inspect them and the tree very closely, at last made out what I thought might be the nest. One of the boys at once commenced the ascent, when the male bird, by flying in, put an end to all doubts as to its identity. Having climbed a little above the level of the nest, the boy was able to see that it was empty, so we left it undisturbed for the present. On the 9th of April we returned, and the same boy, climbing up, saw that there were eggs. The thing to do now was to get them, and a very difficult task it proved. The birds had built at the end of a thin branch between 30 ft. and 40 ft. from the ground, and to me from below it looked a most hazardous attempt. Fearing an accident, therefore, I begged the lad to come down, but he said he was confident that he could reach the nest, and, my desire to obtain the eggs overcoming my prudence, I allowed him to try. Balancing himself by a few small twigs, he left the main trunk and stepped out upon the branch; very gradually he stooped, and stretched out his hand and succeeded in reaching the nest, which, greatly to my relief and delight, he brought down in safety.

I saw no more of these birds after the month of May, though why I do not know. The College boys declare that this species and the larger one (*P. speciosus*) only breed here in March and April. Nobody got the eggs of the latter this year, though a pair of birds, evidently nesting, were brought to me in the flesh in the beginning of March. The mangoes in La Martinière Park are full of notes, occupied in the earlier part of the season by the Chestnut-bellied Nuthatch (*Sitta castaneiventris*), the Indian Roller (*Coracias indica*), and the Spotted Owlet (*Athene brama*); and later on, in May and June, by the Common Mynah (*Acridotheres tristis*). The first-named is a very early breeder; the hole is plastered up with mud in the same

way as that of the European Nuthatch, and the eggs are similar. In none of the nests of the Roller which I examined did I find any lining, and the Owlets, which inhabit similar situations, often do not line their holes.

The two species of Barbet, namely, Franklin's Green Barbet (*Megalaima caniceps*) and the Crimson-breasted Barbet (*Xantholema indica*), which nest here, dig their holes (of course unlined) in rotten branches, the latter species generally choosing the under side. The Golden Woodpecker (*Brachypternus aurantius*) also breeds here, and probably the Yellow-fronted Woodpecker (*Picus mahrattensis*), for I saw the latter several times during the season, though I was unable to find a nest.

The pretty little Bee-eaters, *Merops viridis* and *Merops philippensis*, lay their eggs just when the hot weather is well started (April and May). It requires a large amount of patience and perseverance, after having found a hole, to dig it out. There you stand in your lightest clothes, the thermometer at 150°, and probably a hot wind blowing, the baked sand-hills radiating the heat like a furnace, and the ground like iron. After perhaps an hour's desperate digging, you come upon the hen-bird in her boudoir. Alas ! the wretched little hussy has determined that the first egg is not to be laid till to-morrow, and there you are, the perspiration streaming down your face, fagged out, and in anything but a Christian-like frame of mind, without a single egg to reward you for your toil. From the second week in April to the end of July is the nesting-season, *par excellence*, in Lucknow. The chief birds then breeding, besides many before mentioned, are the various Cuckoos, Tailor-birds, Warblers, Tree-Pies, Shrikes, Drongos, Crows, Mynahs, Larks, Sparrows, Orioles, and Paddy-birds.

The Tailor-bird (*Orthotomus longicaudus*), though by no means uncommon, does not attract much attention, except by its call, which is loud. The nest is always difficult to find, and those which I have taken or had brought me have never been composed of more than three leaves. The Indian Golden Oriole (*Oriolus kundoo*), which is closely related to

the European bird, is very common in the hot weather, but its beautiful basket-shaped nests can, in many cases, be taken only at some risk. I have always found them placed between the slender forks of an outer branch, at heights varying from 10 ft. to 50 ft. from the ground.

The Indian Magpie, or rather Tree-Pie—for it differs in many points from the enemy of the gamekeeper—makes a rough undomed nest at the top of some tree, and lays from three to five eggs, which vary in colour from salmon-pink, richly blotched with brown, to a light green feebly marked with grey or brownish green. In the shape of the bill and tail as well as in habits this species differs considerably from *Pica*. The birds are often to be found going about in small parties, and when undisturbed they have a pretty call, something like “*cogee-cog-ee*,” but if angry or alarmed they make the most disagreeable sound.

I found all my eggs of the Paddy-bird or Pond-Heron (*Ardeola grayi*) in May and the early part of June. Mr. Hume says that in Upper India the breeding-season is from July to August, and Colonel G. F. L. Marshall does not record nests earlier than June. This species, together with the Indian House-Crow (*Corvus impudicus*) and the Pied Mynah (*Sturnopastor contra*), breed at the same time near Lucknow. They all seem to prefer the neighbourhood of man during the nesting-season; indeed, I have never got the eggs of the Paddy-bird except from trees situated in some native village. The Crows and Mynahs seem to prefer babool-trees, while the Paddy-bird usually selects the sheshum, or, failing that, the mango.

When the “rains” commence, the following may be found breeding:—Ground-Cuckoos, Water-birds in general (except Terns), Weaver-birds, and most of the Warblers. Besides these, many of the species already mentioned continue laying.

Two species of Ground-Cuckoo occur in Lucknow rarely: the Bengal Sirkeer (*Taccocua sirkee*) and the common Coucal or “Crow-Pheasant” (*Centropus rufipennis*).

The Sirkeer is a very shy bird and not particularly common.

The only nest of this bird that I found was an enormous mass of leaves at the top of a mango-tree; the centre contained a very deep depression, lined with grass, in which lay four rather elongated white eggs. The nest was built up considerably more on one side than on the other, but was not by any means domed.

All the nests of the "Crow-Pheasant" that I have examined have been like enormous balls of twigs and grass, lined with grass and leaves, and having a hole at one side for entrance and exit. The eggs are rather larger and decidedly rounder than those of the Sirkeer, but, like them, are covered with a chalky substance that can be easily scratched with the finger-nail.

The White-breasted Waterhen (*Gallinula phaenicura*) is a bird very locally distributed, occurs in and around Lucknow. I had the good fortune to get a nest containing three fresh eggs near the railway line, and I saw another nest in the Wingfield Park, from which I was told by some boys that they got seven eggs.

Some of the prettiest nests imaginable are those of the Wren-Warblers. Two species—namely, Stewart's Wren-Warbler (*Prinia stewarti*) and the Earth-brown Wren-Warbler (*Prinia inornata*)—are very common here. The first usually builds a nest like that of the Tailor-bird, differing, however, in the larger number of leaves used in the construction. Sometimes the nest is a deep pocket like that of the Earth-brown Wren-Warbler. The eggs are always of a brick-red or mahogany colour, rather darker in shade at the large end. The Earth-brown Wren-Warbler makes a deep cup of grass beautifully plaited and woven between the stems of the "patowal." Sometimes one side is much more built up than the other, so that the entrance appears to be in the side. The eggs are of two distinct types: the first has a greenish-blue ground, profusely blotched, spotted, and streaked with brown, purple, and black; the second has similar markings on a white or pale pink ground. Of this latter type Mr. Hume remarks that eggs are "so rare that I have only seen about six in as many

hundreds." I considered myself fortunate, therefore, to have found two nests this year, one containing three, and the other four eggs, marked in this manner. The Common Weaver-bird (*Ploceus baya*) appears to breed about here during September and October, though in most other parts of India they seem to begin earlier. One nest that I found contained four eggs, a very unusual number, two being but rarely exceeded.

The small number of eggs in a clutch is remarkable in India. Three is the average, but many species lay only two, while in Europe I have usually found an average of four or five in each clutch. Probably in colder climates a larger percentage of the young die, and consequently more eggs are laid to allow for accidents.

Another noticeable fact is the large number of species which lay two, and sometimes three, *distinct* types of egg. The common "King-Crow" lays sometimes a pure white egg, at other times a salmon or pinkish egg spotted with brown and red. The eggs of the Tailor-bird may be either blue with small red dots, or white with red blotches. I have already referred to the differences in the eggs of the Tree-Pie and in those of the Earth-brown Wren-Warbler. In no case do you find two types in the same nest, nor, so far as I have observed, does the parent of one type of egg ever produce one of the other.

A third peculiarity that I have noticed very often, though I have seen no reference to it in the various books that I have read, is the gregarious instinct of Indian birds. I have often tramped miles without seeing a nest, in places which would appear to be perfectly adapted, and then have come suddenly across quite a number close together.

On one occasion, for instance, when walking along the railway line, I saw a Golden Oriole fly across into some sheshum trees. On following, I discovered her nest about 6 feet from the ground, ready for eggs. On the next tree were nests and eggs of the Red Turtledove, Red-vented Bulbul, and King-Crow; and on the next tree to that were two Crow's nests. On another occasion I found the House-

Kite, Indian Roller, and Spotted Owlet, nesting within a few feet of each other on the same mango.

In my own bungalow and on the trees immediately around it, none of which were more than 50 yards away, the following species bred this year:—House-Kite (*Milvus govinda*), Jungle-Crow (*Corvus culminatus*), House-Crow (*C. impudicus*), Indian Tree-Pie (*Dendrocitta rufa*), Indian Hoopoe (*Upupa nigripennis*), Purple Honeysucker (*Arachnechthra asiatica*), House-Sparrow (*Passer domesticus*), Bengal Babbler (*Crateropus canorus*), Brown-backed Robin (*Thamnobia cambaiensis*), Golden Oriole (*Oriolus kundoo*), Common Mynah (*Acridotheres tristis*), Common Drongo or "King-Crow" (*Dicrurus ater*), Indian White-eye (*Zosterops palpebrosus*), and Speckled Turtledove (*Turtur suratensis*).

In addition to these a *Neophron* usually builds on my roof, but did not do so this year, as repairs were being executed. Why birds, often with such opposite habits as the Kite and the Roller, should breed near each other, puzzles me. The only reason I can assign for it is that they think that there is safety in numbers.

On my nesting excursions I have never got much help from the native, and sometimes very much the reverse. On one occasion, when taking a Vulture's nest, I was badly assaulted, and had great difficulty in getting away. The people are very ignorant and prejudiced, and it is often very difficult to persuade them that you mean no harm. I am always particularly careful not to offend their sensibilities, but unfortunately collisions between villagers and Europeans frequently occur, sometimes the one, sometimes the other being in fault, and the best thing is to keep clear of native dwellings altogether.

In the accompanying list will be found a summary of the nests and eggs obtained this year. I have also added the native (Lucknow) names for as many species as I have been able to obtain.

English Name.	Scientific Name.	Native Name.	Details.
White-backed Vulture.	<i>Gyps bengalensis</i> (Lath.).	Chamar Gidh.	Eggs: Nov. 21, 1895; Dec. 24.
White Scavenger Vulture.	<i>Xenophron percnopterus</i> (Linn.).	Gidh or Kal Mugh.	Egg: March 14, 1895.
Lugger Falcon.	<i>Falco jugger</i> (Gray).	Lugger.	Eggs: Dec. 1894.
Shikra.	<i>Micronis badius</i> (Gmel.).	Shikra.	Eggs: May 1895.
House-Kite.	<i>Milvus forficata</i> (Sykes).	Chil.	Eggs: Feb. 2, 23; March 11, 22, 30, 1895.
Spotted Owlet.	<i>Athene brama</i> (Temm.).	Ulu.	Eggs: March 18, 21; April 4, 7, 13, 1895.
Wire-tailed Swallow.	<i>Hirundo smithii</i> (Leach).	Leishra.	Eggs: March 6, 1895.
Indian Sand-Martin.	<i>Cotyle sinensis</i> (Gray).		Eggs: Feb. 6, 22, 1895.
Indian Swift.	<i>Cypselus affinis</i> (Gray).		Eggs: July 7, 1895.
Common Bee-eater.	<i>Merops viridis</i> (Linn.).		Eggs: April 22; May 5, 1895.
Blue-tailed Bee-eater.	— <i>philippensis</i> (Linn.).		Eggs: May 1895.
Indian Roller.	<i>Coracias indica</i> (Linn.).		Eggs: April 15, 16, 17, 20, 1895.
Pied Kingfisher.	<i>Ceryle rudis</i> (Linn.).	Nilkant.	Eggs: March 1895.
White-breasted Kingfisher.	<i>Haleyon smyrnensis</i> (Linn.).	Kilkila or Maechli Karta.	Eggs: March 1895.
Gold-backed Woodpecker.	<i>Brachypternus aurantius</i> (Linn.).		Nest-hole: May 10, 1895.
Franklin's Green Barbet.	<i>Megalaima caniceps</i> (Frankl.).		Eggs: March 23; April 10, 1895.
Crimson-breasted Barbet.	<i>Xantholeuca indica</i> (Lath.).		Eggs: March 22; April 24; May 24, 1895.

English Name.	Scientific Name.	Native Name.	Details.
Rose-ringed Paroquet.	<i>Palaeornis torquatus</i> (Bodd.).	Tota.	Eggs: March 22, 1895.
Pied Crested Cuckoo.	<i>Coccyzus melanoleucus</i> (Gmel.).	Chatak.	Eggs: July 1895.
Indian Koel.	<i>Eudynamis orientalis</i> (Linn.).	Koel.	Eggs: May, June, 1895.
Common Coucal.	<i>Centropus virgipennis</i> (Ill.).	Mohok.	Eggs: June 27; July 9, 18, 1895.
Bengal Sirkeer.	<i>Taccocua sirkee</i> (Gray).		Eggs: July 5, 1895.
Purple Honey-sucker.	<i>Arachnechlora asiatica</i> (Linn.).		Eggs: Feb. 26; March 13, 23, 27, 30; April 4, 24, 1895.
Thick-billed Flower-pecker.	<i>Piprisoma agile</i> (Tick.).		Eggs: March 30; April 25, 1895.
Chestnut-bellied Nuthatch.	<i>Sitta castaneiventris</i> (Frankl.).		Eggs: Feb. 21; March 10, 14, 1895.
Indian Hoopoe.	<i>Upupa nigripennis</i> (Gould).	Hud-hud.	Eggs: March 22, 1895.
Rufous-backed Shrike.	<i>Lanius erythronotus</i> (Gmel.).		Eggs: May 1895.
Common Wood-Shrike.	<i>Tephrodornis pondiceriana</i> (Gmel.).		Eggs: June 1895.
Small Minivet.	<i>Pericrocotus peregrinus</i> (Linn.).	Chota Raja Lal.	Eggs: April 9, 1895.
Common Drongo.	<i>Dicrurus ater</i> (Hern.).	Hojunga.	Eggs: April 30; May 3, 7; June 1, 6, 9, 1895.
Bengal Babbler.	<i>Crateropus canorus</i> (Linn.).	Sat Bhai.	Eggs: March 3, 20; April 14, 15; May 24, 1895.
Striated Bush-Babbler.	<i>Arreya caudata</i> (Drap.).		Eggs: March 22, 1895.
Red-whiskered Bulbul.	<i>Otocompsa emeria</i> (Shaw).	Kanera Bulbul.	Eggs: April 5, 17; May 5, 1895.
Bengal Red-vented Bulbul.	<i>Molpastes bengalensis</i> .	Bulbul.	Eggs: April 20; June 13, 16, 1895.

Indian Golden Oriole.	<i>Oriolus kundoo</i> (Sykes).	Pila Chirya.	Eggs: June 9, 25, 29, 1895.
Magpie Robin.	<i>Copsychus saularis</i> (Linn.).	Dayal.	Eggs: June 6, 1895.
Brown-backed Robin.	<i>Thamnobia cambaiensis</i> (Lath.).	Dhama.	Eggs: Mar. 13, 21, 24, 31; April 13, 19; May 13; June 28, 1895.
Brown Rock-Chat.	<i>Cercomela fusca</i> (Blyth).	Shama.	Eggs: April 1895.
Indian Tailor-bird.	<i>Orthotomus longicaudus</i> (Gmel.).	Phudki.	Nest: Apr. 13. Eggs: May, June 1895.
Stewart's Wren-Warbler.	<i>Prinia steuarti</i> (Blyth).	Thic-thic.	Eggs: March 31; June 28; July 12, 18, 1895.
Rufous Grass-Warbler.	<i>Cisticola cursitans</i> (Frankl.).		Eggs: March 30; April 7. Nests: July 1895.
Earth-brown Warbler.	<i>Drymoipus terricolor</i> (Hume).	Phudki.	Eggs: June 20, 21, 27, 28; July 12, 22; Aug. 21, 1895.
Rufous-fronted Warbler.	<i>Franklinia buchanani</i> (Blyth).		Eggs: June 20, 1895.
Indian Pied Wagtail.	<i>Motacilla maderaspatana</i> (Gmel.).	Chota Kowa.	Eggs: April 18, 1895.
Indian House-Crow.	<i>Corvus impudicus</i> (Hodgs.).	Barra Kowa.	Eggs: June 3, 7, 9, 13, 25, 1895.
Jungle-Crow.	— <i>culminatus</i> (Sykes).	Mootri.	Eggs: April 27, 1895.
Indian Tree-Pie.	<i>Dendrocitta rufa</i> (Lath.).	Abulka.	Eggs: April 12; May 19, 26, 1895.
Pied Mynah.	<i>Sturnopastor contra</i> (Linn.).	Mynah.	Eggs: May 15, 16; June 6, 1895.
Common Mynah.	<i>Acridotheres tristis</i> (Linn.).	Daryta Mynah.	Eggs: June 15, 28, 1895.
Bank-Mynah.	— <i>ginginianus</i> (Lath.).	Baya.	Eggs: May 5, 27; June 1, 1895.
Common Weaver-bird.	<i>Ploceus bayu</i> (Blyth).	Chiruka.	Eggs: Sept. 25, 27, 1895.
Pin-tailed Munia.	<i>Munia malabarica</i> (Linn.).		Eggs: Jan. Nests: March 1895.

English Name.	Scientific Name.	Native Name.	Details.
House-Sparrow.	<i>Passer domesticus</i> (Linn.).	Geriya.	Eggs: April 3; May 17, 23, 1895.
Yellow-throated Sparrow.	— <i>flavicollis</i> (Frankl.).		Eggs: May 1895.
Indian White-eye.	<i>Zosterops palpebrosus</i> (Temm.).		Eggs: April. Nests: June, July, August, 1895.
†Singing Bush-Lark.	<i>Mirafra cantillans</i> (Jerd.).	Hurial. Khabuta.	Eggs: July 22, 1895.
Green Pigeon.	<i>Crocopus chlorigaster</i> (Blyth).		Eggs: May 1895.
Rock-Pigeon.	<i>Columba intermedia</i> (Strickl.).		Eggs: May, June, 1895.
Speckled Turtle-dove.	<i>Turtur suratensis</i> (Gmel.).	Pindak.	Eggs: March 14, 20, 31; April 19; May 7, 8, 1895.
Ruddy Turtle-dove.	— <i>humilis</i> (Temm.).		Eggs: June 11, 13, 20, 1895.
Ringed Turtle-dove.	— <i>risorius</i> (Linn.).†		Eggs: May, June, 1895.
†Lesser Button Quail.	<i>Turnix dussumieri</i> (Temm.).	Titri.	Eggs: May 1895.
†Small-ringed Plover.	<i>Agialitis philippensis</i> (Scopoli).		Eggs: March 31, 1895.
Red-wattled Lapwing.	<i>Lobivanellus indicus</i> (Bodd.).		Eggs: June, July, 1895.
Indian Stone-Plover.	<i>Ædicnemus indicus</i> (Salvad.).	Pankomri or Band Murchai. Bogla.	Eggs: June, July, 1895.
White-breasted Waterhen.	<i>Gallinula phanicura</i> (Penn.).		Eggs: June 27, 1895.
Pond-Heron.	<i>Ardeola grayi</i> (Sykes).		Eggs: May 8, 14; June 6, 1895.

In the case of eggs marked (†), though I am fairly convinced of their genuineness, yet they have hardly been sufficiently identified for me to be certain as to their authenticity.

XVII.—*Notes on Birds observed in Russian Lapland, Kolguev, and Novaya Zemlya, in 1895.* By HENRY J. PEARSON. *With Introductory Remarks by Col. H. W. FEILDEN, C.M.Z.S.*

A SHORT prefatory account of the cruise of the 'Saxon' last summer may interest some of the readers of 'The Ibis,' and no doubt will be useful in the future to others who may desire to carry out further investigations in the lands of the Frozen North which we visited.

The project of reaching Novaya Zemlya for ornithological investigations originated entirely with Mr. H. J. Pearson, who, with his brother, Mr. C. E. Pearson, chartered the yacht, defrayed the expenses of the voyage, and invited the Rev. H. H. Slater and the writer to accompany them. To obtain a steam-yacht fitted for cruising in the ice-encumbered waters of Barents Sea is not an easy matter to effect. Many yachts, steam-trawlers, and other descriptions of craft were offered to Mr. Pearson, but on examination were not deemed suitable, and at one time it seemed as if the projected cruise would fall through, owing to the difficulty of finding a suitable vessel. As a last resource the steam-yacht 'Saxon' was chartered. She had made the voyage to Kolguev and Novaya Zemlya in 1894 with Mr. Trevor-Battye and Mr. Mervyn Powys. Her small size and limited coal-capacity, with weak steam-power, were great drawbacks: fully recognized, however, before the vessel was hired. The 'Saxon' is a staunch little sea-boat of 50 tons registered and 117 tons yacht measurement, and, though tried pretty severely, behaved remarkably well in some tolerably heavy weather. It will be seen in the sequel that the 'Saxon's' want of steam-power and coal-capacity greatly modified the original plan of the voyage, which was to arrive in Novaya Zemlya at the earliest possible date, and to carry out there extended ornithological researches. The voyage from Bergen through the inner fiords of the Norwegian coast, a run through the Lofoden Islands, and our rambles in the birch-woods around Tromsö, with a lovely day passed in the

Porsangerfjord, and a visit to the island of Store Tamsö, with its wealth and variety of bird-life, only require a passing notice, as Mr. H. J. Pearson and Mr. E. Bidwell have lately published in these pages their experiences in this part of Arctic Norway*.

At Vardö the little 'Saxon' was filled up with fuel to her utmost capacity, every available portion of her deck, as well, being piled up with sacks of coal. Leaving Vardö on June 14th, the course was laid for Nameless Bay, in the north-west of the south island of Novaya Zemlya. A careful study of the voyages of Lamont, Leigh-Smith, Markham, Gore-Booth, Nordenskjöld, Payer, Wilczek, and others, had led us to the conclusion that the most favourable line of approach to Novaya Zemlya, at the comparatively early season of the year we were attempting it, lay in this direction. We were in hopes that the heavy polar pack that stretches in a curve from the south-east of Spitsbergen to the western shores of Novaya Zemlya, might in June find its southern limit about the latitude of Matyushin Schar, the strait which divides the two islands of Novaya Zemlya. At the same time the ice which forms during winter in the great bight of Barents Sea—lying between Cape Kanin, Kolguev Island, and Goose-land of Novaya Zemlya—might then be disrupted and moving westward, and a comparatively clear lead would probably be found about the parallels of 72° and 73° N., between the northern and southern packs. This was the experience of Admiral Markham and Sir Henry Gore-Booth in 1879, who, in the little sailing craft 'Isbjörn,' anchored in Nameless Bay on the 12th of June, without encountering exceptional difficulties from ice.

Two days after leaving Vardö, on the evening of June 16th, we passed through a good deal of loose ice, and at midnight were brought up by heavy pack, which extended north-west, north, and east without a break, and no sign of a water-cloud. Towards those points of the compass an ominous yellow ice-blink hung over the vast ice-fields. We were then in 72° N. lat. and 45° E. long., Goose-land, the nearest

* 'Ibis,' 1894, pp. 226-238.

part of Novaya Zemlya, being 120 miles distant. During the 17th and 18th of June we worked along the edge of the ice in a south-easterly direction, every likely bight in the pack was entered, and in some places these indentations were followed up for 20 or 30 miles, but invariably they ended in blind leads, and we were brought up by impenetrable ice. On the morning of the 17th June we reached our nearest position to Novaya Zemlya, on the 71st parallel, South Goose Cape being 80 miles distant. Still working south, and hugging the edge of the pack, we found ourselves at mid-day of the 18th June in lat. 70° N., but the trend of the pack had forced us to the westward some 120 miles from the shores of Novaya Zemlya.

At this stage of our voyage we were confronted with the difficulty always hanging over us, but which we had hoped against hope to escape—the paucity of our coal supply. The little ‘Saxon’ at this juncture had only enough fuel left to take her back to Vardö, whilst no dependence could be placed on her sail-power. Our first attempt to reach Novaya Zemlya had to be abandoned, the ship’s course was shaped for the Murman coast of Russian Lapland, and on the morning of June 20th the beacon on Sviatoi Nos was sighted. We steamed into Sviatonoskia Bay, on the west side of Sviatoi Nos, and worked our way up the Ukanskoe River, which flows into the south-west angle of the bay, and anchored about three miles up the river close to a Lapp summer settlement, the village of Lutni. Here the members of the expedition went into camp and prosecuted their researches. In the meantime the ‘Saxon’ proceeded to Vardö for a further supply of coals. A very pleasant week was passed in the vicinity of Lutni, and the neighbouring country was explored for several miles around camp. But the want of some means of locomotion other than walking was a serious hindrance. There are no ponies amongst the Lapps, and the reindeer are not available for travelling when the snow is off the ground. Above Lutni the Ukanskoe River is so beset with rapids that it is not navigable, even for the boats of the natives. However active and willing

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travellers may be, there is a comparatively short limit to the possible walk from camp, even in the long twenty-four hours' day of a Lapland summer. In spite of this immense drawback, useful observations were made by the party.

The 'Saxon' returned to Lutni late on the evening of the 27th June, and by 1 A.M. of the 28th, camp had been struck and everything was on board. The vessel at once steamed out to sea. In the afternoon we were abreast of Cape Kanin, a low uninviting tundra-land, streaked with patches of snow. Early the next day we sighted the island of Kolguev, and by 7 A.M. were abreast of its northern extremity. Shortly after we saw the ice-pack on our starboard quarter stretching south in a solid mass, and resting on the north side of the island. We steamed into thick banks of fog in a heavy and confused sea, and hove to for several hours. In the afternoon the fog cleared somewhat, and we steamed to the edge of the pack, our latitude by dead reckoning being 70° N. All throughout the next day, the 30th June, whenever the fog permitted, we continued making nothing, keeping close to the ice. This went on till the afternoon of the 1st July. The weather then cleared, a smart breeze coming up from the south-east, and under steam and sail we ran along the pack edge till 12 P.M. A midnight observation placed us in $71^{\circ} 3'$ N. lat., our approximate longitude being $49^{\circ} 5'$ E. The 2nd of July was bright and fine, with a fair and strong breeze from south-east, but the ice was as dense as ever, and lay in an unbroken mass to the north as well as to the east. We had to alter our course to sail round the most north-westerly point of the ice, and in so doing passed through the loose fragments of ice which hung around this projecting point. These lumps were heavy, and we could see their blue tongues wallowing and rolling 20 feet below the surface as they tumbled about in the heavy swell. On rounding this point at 6 P.M., great was our joy to see a broad and expansive lead showing to the north-east, and directly in our course for Novaya Zemlya. Steam was got up, every bit of canvas set, and we bowled along with clear water ahead of us. At 11 P.M. the high mountains of Novaya

Zemlya were seen, and a little after midnight we were within eight or ten miles of the low shores of Goose-land. Here our further progress was stopped by a close pack which stretched eight miles broad along the entire length of Goose-land, and joined with the main fields of ice off North and South Goose Capes. Our position was extremely aggravating ; there was the land of promise only a few miles away, and yet we were effectually cut off from it.

Some narrow leads and cracks showing to the north-west, the yacht was worked into the pack in that direction, in the hope that it might bring us round North Goose Cape, and that open water might be found in the neighbourhood of Möller Bay. By 6 A.M. of the 3rd July we had worked into the pack as far north as lat. $72^{\circ} 10'$, but we had been edged out some 26 miles from the land, North Goose Cape bearing exactly due east of our position. We had therefore not improved our circumstances, but, on the contrary, as the leads we had worked along were constantly shifting and closing under the influences of wind and tide, we were in imminent risk of being beset. The only course left was to endeavour to retrace our steps. This was done, and after a final struggle with a barrier of loose ice some 50 yards wide, which taxed to the full all the little steam-power of the 'Saxon,' the big space of open water off Goose-land was regained. By this time the broad channel which we had come by the previous night had become completely closed.

For the rest of that day we worked slowly along the edge of the pack that barred us from the land, hoping for some beneficial change. It was evident that great movements were taking place amongst the ice-fields, we could see dark clouds betokening open water in the direction of Kostin Schar, beyond South Goose Cape. A great channel three or four miles wide, connecting with the water space we were in, opened up during the course of the day to the south-west. Evidently the entire pack was loosening off the land and moving forth for its final break-up in Barents Sea. Could we have remained for the next few days, taking advantage of every favourable movement in the ice, there is little doubt

we should have been able to effect a landing. As it was, there was only sufficient coal left to take the 'Saxon' back to Vardö under favourable conditions of wind and weather, so, for the second time, the order to retreat had to be given. With a favouring south-east wind and a full head of steam, we ran down the broad channel of water to the south-west at a speed of nine knots, and in three hours had cleared the ice on our starboard, but still kept it on our port side all the way to Kolguev, which we sighted on the evening of the 4th of July.

It had been determined, if our second attempt to reach Novaya Zemlya failed, that our party should land, if possible, on Kolguev, whilst the yacht again went to Vardö for coals. The 5th of July ushered in a splendid morning, the sea as smooth as glass, with a gentle warm wind from the south. Under these pleasant surroundings we ran down the west shore of Kolguev under the lee of the land, the island, with its mournful-looking cliffs of blue clay and flat treeless tundra, looking less dismal than is its wont. The intention was to have made a landing, if practicable, at the mouth of the Kriva River, in the south-west of the island; but when we got abreast of the entrance to the Gobista River the sea was so smooth and the landing looked so easy that it was thought wise not to miss a chance, as already the wind was veering to the east, and masses of black thunder-cloud were rising portentous from the horizon to the zenith in the same direction, accompanied by the distant rumbling of thunder. The yacht was run in to within a mile of the shore and anchored in three and a half fathoms. Tent, supplies, and bedding were rapidly landed and camp made, but not before the thunder-storm broke over us, with rain and great fury, accompanied by vivid flashes of lightning: a phenomenon not common in the Arctic Regions. We were none too soon, for just as the men and boats returned to the yacht, and the "farewell" had been hoisted, and the 'Saxon' bore away for Vardö, the long, angry, surf-crested waves came booming in on the beach, and for the next ten days there was never a time that a boat could have communicated with the shore or

a landing been possible. Our stay on Kolguev lasted ten days. During the greater part of the time the weather proved very inclement, with frequent fogs and bitter cold winds from the north and north-west; during three days the pack-ice came down from the north and girdled the west side of the island.

On the 13th of July we saw the little 'Saxon' in the offing; she came within two or three miles of the shore, but it was blowing hard from the north-west, with a heavy sea. To communicate with us was impossible, and we soon lost sight of the vessel in the driving mist and fog, apparently heading southward. By the morning of the 16th July the weather improved; there was little fog, and the sea calm. At 7 A.M. the 'Saxon' returned and anchored off the entrance to the Gobista. Our camp equipage was rapidly transferred to the yacht, and in three hours we were steaming northward on a third attempt to reach Novaya Zemlya.

Though we obtained interesting results in ornithology, botany, and geology in the neighbourhood of the Gobista, yet the want of means of locomotion, other than on foot, greatly circumscribed our explorations. We saw nothing of the Samoyeds, though the tracks of their reindeer-sledges were met with on the tundra, while the large piles of drift-wood recently stored up at the mouths of streams and gullies debouching on the shore, showed that some of them must have lately visited the western side of the island.

We imagine that our ornithological investigations would have proved richer had we landed further south and nearer the great lake of Promoinoe. But, as a matter of fact, we were fortunate under the circumstances in effecting a landing at all, and still more in getting off the island with so little trouble. The want of any harbours, the shallowness of the surrounding sea, the dangerous and shifting sand-banks, extending miles to seaward, the presence of ice, frequent fogs and bad weather, even in summer, make Kolguev abhorred by mariners, and render an approach in a ship of even moderate draught very risky. This, of course, accounts for the little reliable information we possessed of an inter-

esting island until the visit of Mr. Trevor-Battye in 1894, the outcome of which was his delightful volume 'Ice-bound on Kolguev.' We quite realize and appreciate his courage, almost temerity, in landing and being left with a single companion on this bleak and desolate island, scantily provided with stores, and not knowing for certain whether the island was inhabited even by a few wandering Samoyeds, nor whether Russian traders from the Petchora still continued their summer visits to Kolguev.

Rounding the north of Kolguev, we found that a marvelous change had taken place during the past ten days. The great fields of pack-ice, which then extended from the north of the island to Novaya Zemlya, had completely disappeared, and we steamed into Kostin Schar on the evening of the 17th July without encountering any ice worth mentioning.

After visiting an island at the entrance of Kostin Schar, on which we found an extensive breeding-place of Brünnich's Guillemots, we anchored in a bay on the mainland of Novaya Zemlya, in latitude $71^{\circ} 21' N$. From there excursions were made inland. Several reindeer were seen, but they were wild and difficult of approach. The country thereabouts is much broken up by streams, gullies, and lakes, the latter still covered in part with ice. Though this portion of Novaya Zemlya is hilly and rocky, probably 500 to 800 feet in altitude, it presents no insuperable difficulties to an active walker, nor was there sufficient snow left to form any serious obstacle to progress. Indeed, we thought, had time been at our command, that we might without great difficulty have reached the base of the interior mountain-ranges, which rise here, probably, to a height of some 2000 feet, at a distance of about 15 miles from the coast. These interior ranges were at this time only partially snow-clad, and we saw no traces of glaciers in their valleys nor on their flanks.

On the 19th of July we left this anchorage, and, steaming into the Kostin Schar, landed on and examined several islands. The following day we took up our anchorage in Nechwatowa Bay, a well-sheltered and secure harbour. From there excursions were made inland. Leaving this anchorage

on the 23rd of July, we proceeded to Belootcha Bay, which lies between the promontory of South Goose Cape and the mainland. This wide and open bay is extremely shallow; we had to anchor in a very exposed and dangerous position, in only $3\frac{1}{2}$ fathoms, the best water we could find, but we saw no prospect of making good a footing on Goose-land unless this risk was run. Explorations were made beyond the head of Belootcha Bay, and likewise on Goose-land proper, the ornithological results of which are detailed further on. Early on July the 27th we left Belootcha Bay and sailed for Vardö. We met with head-winds and heavy seas, which retarded our progress, but we reached Vardö on the night of the 30th of July, with only five hundredweight of coal left in our bunkers; thus safely ending an interesting and adventurous voyage to Barents Sea in a very unsuitable craft.—H. W. F.

List of Birds observed in Russian Lapland, June 20th to 27th.

By HENRY J. PEARSON.

+ 1. *TURDUS ILIACUS*. Redwing.

Fairly numerous, especially about Lake Ukanskoe. We saw many old nests and young birds, but only took one clutch of eggs (six). The nests were generally placed in the forks of birch-trees (*Betula intermedia*).

2. *TURDUS TORQUATUS*. Ring-Ouzel.

Several were observed in the birch scrub near our camp, but none inland.

+ 3. *SAXICOLA ŒNANTHE*. Wheatear.

Seen twice.

4. *CYANECULA SUECICA*. Red-spotted Blue-throat.

We found a nest with seven eggs on June 26th, in a patch of coarse herbage on marshy ground, close to a small stream, and shot the female.

5. *PHYLLOSCOPUS TROCHILUS*. Willow Warbler.

Abundant. Most of the nests found contained eggs nearly fresh; two nests had each seven eggs, but five to six appears a more usual number.

6. *ACROCEPHALUS PHRAGMITIS*. Sedge-Warbler.

A male was shot near Lake Ukanskoe; also two others were seen and heard there.

7. *CINCLUS*, sp. inc. Dipper.

One seen on the river by the writer, but not near enough for the determination of the species.

+8. *MOTACILLA ALBA*. White Wagtail.

Several were seen near the coast and inland. We found a nest of six eggs in the midst of a large stony tract on the hills, which appeared the most unlikely place possible for a nest of any description.

+9. *ANTHUS PRATENSIS*. Meadow-Pipit.

We shot old birds and obtained both eggs and young. It was a common species, especially on the higher ground.

+10. *ANTHUS CERVINUS*. Red-throated Pipit.

Locally common, especially round the tarns and more marshy ground, where it replaced *A. pratensis*. Several were shot, and some well-marked clutches of eggs were obtained. These eggs vary much more in colour and marks than those of *A. pratensis*. In all the nests H. and C. Pearson took in Norway in 1893 there were a few horsehairs or fine black roots in the lining, but we found no trace of this peculiarity in Lapland.

11. *LINOTA EXILIPES*. Coues's Redpoll.

This was the Redpoll of the district and the only one seen. It was abundant on both sides of the fjord and round Lake Ukanskoe. Pairs were also scattered over the hills as high as the birch reached. Unfortunately we were rather late for eggs, and most of those taken were much incubated. We found five nests with eggs (four, five, five, five, four respectively) and six with young. Dresser states, in his 'Birds of Europe,' that authentic eggs were unknown to him, and it may be of interest, therefore, to state that these, as well as the nests, are indistinguishable from those of *L. linaria*. The nests were generally in birch-scrub, and placed near the

main stem; but one or two were found in juniper bushes, 12 to 18 inches above the ground; they are beautifully constructed to imitate the colouring of the birch-bark, and are among the prettiest of the northern nests.

12. *CALCARIUS LAPPONICUS*. Lapland Bunting.

Somewhat scarce; one male shot, and several birds seen and heard.

13. *CORVUS CORAX*. Raven.

Several seen. They were generally on the shores of the river near our camp.

14. *OTOCORYS ALPESTRIS*. Shore-Lark.

Fairly numerous, but we only secured one nest (four eggs) in this district. It was on an islet in Lake Ukanskoe, about 10 feet above the water and 80 yards from it, on sandy ground covered with grass.

15. *ARCHIBUTEO LAGOPUS*. Rough-legged Buzzard.

We found nine nests of the year: two empty, but the birds about; six with eggs (four, four, one, two, two, two respectively), in various stages of incubation (up to the point when the chicks were putting their beaks through the shell and calling distinctly, if not loudly, for their mothers!); and one with young. The position of the nests varied very much; two or three were inaccessible without a rope, one was on the outer edge of a large mass of rock, and we walked to it over practically level ground, while one or two others were on the tops of "perched" boulders and almost as easy of access. Evidently the Buzzard is not much disturbed in this country! The nest is very easily found, as one hears the cat-like call of the old birds in the air almost before seeing them, and their behaviour soon indicates the approximate position of the nest. Some of the eggs taken were richly marked.

+ 16. *HIEROFALCO GYRFALCO*. Gyr Falcon.

We found a nest of this species containing young, in a deep ravine, placed halfway up the cliff on a part that was rather undercut or recessed, making it difficult of access, even

with a rope. We saw both the old birds, but failed to secure either, though if we had waited longer we might probably have shot the female, but the mosquitoes in that gorge were beyond description in language suitable for 'The Ibis.'

17. PHALACROCORAX GRACULUS. Shag.

Several seen round the islands on the coast.

+18. ANSER SEGETUM. Bean-Goose.

While following up a small stream on our way to "Falcon Gorge," we saw four Geese fly over, two of which settled on a marsh opposite and joined three goslings, running through the scrub. We gave chase at once, and after a smart run two of the three little fellows were secured and put in a fishing-basket, but in a minute both were out through the hole in its lid! One succeeded in getting off down the stream; the other youngster was tied up in a handkerchief to prevent further wanderings. After watching a short time in the scrub, we succeeded in bringing down the mother, which proved to be a Bean-Goose, thus deciding one species of Goose for the district. We had already observed eight or ten Geese here we thought to be Bean. In the race for the goslings we discovered the nests of Willow-Wren, Red-spotted Blue-throat, and Meadow-Pipit; so that quarter of an hour was rather more productive than most of the time we spent here.

Bernicla ruficollis.

The head man of the village of Lutni at once recognized a painting of the Red-breasted Goose, and assured us it bred occasionally near Lake Ukanskoe, but we failed to find any trace of it.

19. MARECA PENELOPE. Wigeon.

Thought to have been seen by Slater at the mouth of the river.

20. FULIGULA MARILA. Scaup.

One pair seen and the male shot.

21. HARELDA GLACIALIS. Long-tailed Duck.

Fairly common, but only one nest (seven eggs) found.

22. *SOMATERIA MOLLISSIMA*. Eider Duck.

Not as numerous as on the Norwegian coast; but this is not to be wondered at, for we saw three natives on an island who not only took every nest they could find, but also shot every old Duck which did not leave before their flint-locks could be brought to bear on her.

23. *ÆDEMA*, sp. inc. Scoter.

A pair seen on the lake, but not shot, and the party could not agree as to the species.

24. *MERGUS MERGANSER*. Goosander.

Two pairs seen.

25. *LAGOPUS ALBUS*. Willow-Grouse.

Fairly common. There would probably be some good shooting round the lake in the autumn. At the time of our visit a few young birds had hatched out.

26. *CHARADRIUS PLUVIALIS*. Golden Plover.

Fairly common.

+27. *ÆGIALITIS HIATICULA*. Ringed Plover.

One or two birds were shot and eggs taken. Six were seen feeding together on the beach; in fact, most of these birds were observed near the sea.

+28. *EUDROMIAS MORINELLUS*. Dotterel.

We found two nests (three eggs each) one night; both were on the same range of hills. One bird was shot from the nest and proved to be a male; its gizzard contained about equal proportions of insect and vegetable matter, the former consisting of the hard parts of beetles, and the latter apparently seeds of *Empetrum nigrum*; there was also a little gravel. The bird from the other nest was very tame, coming several times within two feet of us as we sat blowing the eggs. We saw no more of this species in other parts of the district, although we often looked for them.

+29. *STREPSILAS INTERPRES*. Turnstone.

Two or three pairs were seen on the islands, apparently breeding, but no nests were found.

- + 30. *HÆMATOPUS OSTRALEGUS*. Oyster-catcher.
Seen on one island.

31. *PHALAROPUS HYPERBOREUS*. Red-necked Phalarope.
Fairly common in suitable localities. Three nests were obtained (four, three, four eggs respectively).

32. *GALLINAGO MAJOR*. Great Snipe.

A bird was flushed from its nest (four eggs) at the edge of a willow-swamp near Lake Ukanskoe, but unfortunately we failed to secure it. The nest was placed on a tussock of coarse grass.

33. *TRINGA MINUTA*. Little Stint.

Two birds of this species were shot on the shore when we first landed; they proved to be male and female, but on dissection they did not appear to be breeding. These were the only ones we saw.

34. *TRINGA TEMMINCKI*. Temminck's Stint.

Fairly plentiful, both round the village of Lutni and on the islands in Lake Ukanskoe. We found a number of nests, the eggs in which were nearly fresh, and shot three birds from the nests (♂ ♀ ♂).

35. *HELODROMAS OCHROPUS*. Green Sandpiper.

We saw about 20 of these birds one night, but could not find their eggs. In a female we shot, the eggs were only beginning to pass down the oviduct, so the species appears to be a late breeder.

- + 36. *TOTANUS CALIDRIS*. Redshank.

Two pairs were seen, and one clutch of four incubated eggs taken.

37. *STERNA MACRURA*. Arctic Tern.

Fairly numerous on one of the islands, where they were breeding. Three clutches of three eggs were obtained, but most of the birds had two or only one egg.

- + 38. *LARUS CANUS*. Common Gull.

Numerous. They were breeding on one of the outer

islands, and also on one in the river, about three miles from the sea.

39. *LARUS MARINUS*. Greater Black-backed Gull.

Three or four pairs were observed on one island in the bay, and young in down were found there.

40. *STERCORARIUS CREPIDATUS*. Richardson's Skua.

Common on the islands and near the coast. Several nests were obtained, and one pair of birds shot. The dark form of the latter was the male, and the white-breasted one the female.

41. *STERCORARIUS PARASITICUS* (L.). Long-tailed Skua.

About eight of these birds were observed and two shot (♂ ♂). We found one nest (two eggs) placed near the centre of a large isolated mass of peat standing about three feet above the level of the surrounding bog, and therefore dry. The nest itself was a very slight depression, lined with a few bits of lichen.

42. *FULMARUS GLACIALIS*. Fulmar.

Several were seen in Sviatonoskaia Bay on our arrival.

43. *COLYMBUS ARCTICUS*. Black-throated Diver.

A pair were seen and their eggs taken.

44. *COLYMBUS SEPTENTRIONALIS*. Red-throated Diver.

Common. We took eggs on the edges of some of the tarns.

45. *LOMVIA BRUENNICHII*. Brünnich's Guillemot.

A dead bird was picked up on an island, but it was impossible to say how long it had lain there, as part of the body had been eaten by beetles &c.

46. *URIA GRYLLE*. Black Guillemot.

We named Medveji Island after this species, for there were quite 2000 birds on the sea round it, besides those on the eggs. A number of the eggs were obtained: one specially handsome, with light buff ground-colour.

List of Birds observed on Kolguev (July 5th to 15th).

†1. MOTACILLA ALBA. White Wagtail.

Several observed near the Gobista River.

2. ANTHUS CERVINUS. Red-throated Pipit.

We found four nests of this bird, two with eggs nearly fresh, one with eggs much incubated, and one with young. The third nest contained six eggs, which were the handsomest of the species we have seen. It was placed in coarse herbage over very wet marshy ground. The others were on dry ground; that containing young being on the edge of the bluff facing the sea.

3. LINOTA LINARIA. Mealy Redpoll.

A young male in first plumage, with yellowish-crimson crest and spotted rump, was shot July 6th near our camp. We believe this is the first record of this or any other Redpoll on Kolguev.

4. CALCARIUS LAPPONICUS. Lapland Bunting.

One of the most abundant of the small birds. The males were constantly to be seen and heard on all parts of the tundra. Before we left we observed family parties near the coast preparing for migration. We found no eggs, so nidification must commence here early in June.

5. PLECTROPHENAX NIVALIS. Snow-Bunting.

Common, like the preceding. We found nests of young birds on July 5th, and before we left there were many young flying about the tundra. The nests were chiefly placed in fissures formed by rain and frost in the edges of the bluffs above the sea and water-courses.

6. OTOCORYS ALPESTRIS. Shore-Lark.

These birds were far more numerous here than in any other country we have visited. Either they vary very much in the time of nesting, or rear two broods in the season; for while we saw young birds on the wing when we arrived, we continued to find fresh eggs up to the day of our departure. The favourite position for the nest was evidently on the side

of a dried tussock of coarse grass on the tundra, the upper edge of the nest being level with the surface of the ground. The outer part was always made of fine grass, and the inner lining of the fluffy down of the willow, bog-cotton, and *Nardosmia frigida*. The birds generally sat very close, and their colours harmonized well with the surroundings. We never found more than four eggs in a nest.

+ 7. *NYCTEA SCANDIACA*. Snowy Owl.

We shot a very fine old male of this species with almost pure white plumage, but could find no trace of his having a mate; we thought it possible he was too old to migrate northward for the summer. He was the only specimen seen on the island.

8. *ANSER*, sp. inc. Grey Goose.

Several of these Geese were observed and thought to be Bean, but, as none were shot, we could not identify them positively. They had goslings in down with them; one was caught and appeared to correspond with the Bean gosling taken at Lutni.

9. *CYGNUS BEWICKI*. Bewick's Swan.

The Gobista River runs through an enormous series of glacio-marine beds, which are being constantly denuded by the joint action of spring floods, frosts, and snow, so that the river has formed a long series of bays in its course one to three miles across. These bays are now chiefly marshes, interspersed with lakes and tarns, some of them evidently portions of a former bed of the river; between these bays are headlands of the tundra. On crossing one of the latter we saw two Swans feeding in the marsh below us, and, with the help of glasses, discovered that they had young in down with them. Then at once began a mad race over snow, bogs, &c.; it ended in a dead heat at the edge of the lake. Slater shot the old female and one young one, and two other young were captured by Feilden, but it took two of us to pull him out of the mud after he had secured the second, some yards from shore!! Great was the rejoicing when we examined our prizes, for they proved to be Bewick's Swans. We

saw three or four more old birds about, but, from the number of swan-mounds, we should think they must have been more plentiful some years ago. Since the Russians have provided the Samoyeds with better guns the large birds cannot have had such a happy time here.

10. *HARELDA GLACIALIS*. Long-tailed Duck.

Very numerous about the Gobista. They appear to breed on the tundra, but the nests are difficult to find. We only took one (eight).

11. *SOMATERIA SPECTABILIS*. King-Eider.

A number of males and several females were seen about the mouth of the Gobista, but no eggs obtained. We found one old nest on the tundra, from which the young had been recently hatched; it was more than a mile from the river.

12. *MERGUS MERGANSER*. Goosander.

Several pairs seen.

+13. *LAGOPUS ALBUS*. Willow-Grouse.

Fairly numerous, but the cocks were as wild as Grouse on a Scotch moor at the end of the season. The females sit close, and the only nest we found was by nearly walking over the old bird. There were 14 eggs (much incubated), the largest clutch we have taken of this species.

14. *SQUATAROLA HELVETICA*. Grey Plover.

The discovery of these eggs has been so well described by Seebohm and Harvie-Brown in their paper in 'The Ibis,' that we have little to add. We feel sure, however, that our brother ornithologists will sympathize with our glow of pleasure and even our wild war-dance on finding our first nest containing a clutch of four beautiful eggs. And, indeed, both glow and dance were needed, for few things are more calculated to chill enthusiasm and unpleasantly lower one's temperature than watching, for 50 minutes in a piercing wind and sleet, even a Grey Plover to its nest. We took in all seven clutches of eggs (four, four, four, four, four, one, and three respectively). The first two were fairly fresh. In the third and fourth the chicks were calling and their beaks partly through

the shell. The fifth contained young in down, but not quite so advanced. The one egg in the sixth was nearly hatched, and the three young birds from the other eggs were caught about the nest. In the seventh two eggs were addled, one nearly hatched, and one young in down caught near. A few more young were also secured. The positions of the nests were interesting: only two were on the lower ground near the Gobista; one was a mile both from the sea and the river; all the others—also several old nests—were on the tundra not far from the edge of the bluffs which form the margin of the river-basin. Grey Plovers seem to prefer this position, which gives them good posts of observation and allows them to take their young easily into the marshes below to feed. We found a ready way of locating the nest of this bird was to watch a pair of Richardson's Skua hunting over the tundra, for as soon as they approached the nest of the Plovers, both the latter rose into the air and drove the Skuas away. We never observed these birds breeding near each other, each pair appearing to take possession of about a mile of country. All the nests were slight depressions in the peat, lined with a little lichen.

+15. *ÆGIALITIS HIATICULA*. Ringed Plover.

Fairly numerous near the sea. Several nests were found with eggs; one, in a gully, had been caught by a freshet and nearly buried in the tenacious glacial mud.

+16. *STREPSILAS INTERPRES*. Turnstone.

During their visit to the Porsangerfjord in 1893, II. and C. P. never found the nest of this bird more than five yards from the sea; but on Kolguev the Turnstone selects a position similar to that of the Grey Plover. We took several lots of young in down and one egg, which, curiously, was fresh—not addled—while the other three in that nest were hatched out. In two cases the young were on the mud-flats, with one of the old birds in charge; the other was on the bluff above watching. Turnstones are very noisy when their young are approached, and resort to devices similar to those used by Plover to lure intruders away.

17. *PHALAROPUS HYPERBOREUS*. Red-necked Phalarope.

A number of these birds were observed in suitable localities, but no nests were taken.

+18. *TRINGA ALPINA*. Dunlin.

Common in all the more marshy parts. These eggs—a clutch of four, much incubated—were the first we took on landing. We also obtained several young in down.

19. *TRINGA MINUTA*. Little Stint.

The eggs of this species were among the special prizes obtained on this island. The birds were fairly numerous on both sides of the river as far up as it was affected by the tide, but no nests were found beyond that point. The nests were in all kinds of positions: among coarse herbage on the low marshy ground, on dry ground at the foot of the bluffs, on the sides of the bluffs among dwarf sallow 3 to 5 inches high, and on the tundra among fine low grass some little distance from the edge of the bluffs. We took 15 clutches (12 of four, two of three, and one of one); eight of the most distinctly coloured eggs will be figured by Mr. Frank Poynting in his 'Eggs of the British Limicolæ.' Only two or three of the birds were shot for identification, for when a bird performs a little dance within two feet of you, or sits on your gun-barrel as it lies by your side to see how you blow the eggs, it seems not only unnecessary but cold-blooded murder, to kill it! It was quite bad enough to see one come and sit down in the nest close to your feet, and then get up to enquire where the eggs had gone. Some of the clutches were fresh, others taken some days earlier were too much incubated to make good specimens. In colouring, some eggs are beautifully blotched with burnt-sienna brown on pale green, and are like some varieties of Red-necked Phalarope, while others could scarcely be distinguished from eggs of Temminck's Stint—the latter form proving fatal to the bird! It is evident that great caution must be used in accepting the eggs of this bird as genuine.

20. *TRINGA TEMMINCKI*. Temminck's Stint.

We took only two nests of this bird on the Gobista, and

both were situated above the tidal portion of the river. This species was not so common as the Little Stint.

+21. *STERNA MACRURA*. Arctic Tern.

Several of these were observed near the shore, but we did not find any breeding-place.

+22. *LARUS GLAUCUS*. Glaucous Gull.

Two or three pairs were usually about the mouth of the Gobista. We shot one male and took a nest with two eggs on July 6th.

+23. *LARUS AFFINIS*. Siberian Herring-Gull.

We often saw two or three of this species with the Glaucous Gulls and shot a fine female ; but no eggs were found.

+24. *STERCORARIUS POMATORHINUS*. Pomatorhine Skua.

A few were seen—Slater once saw 14 together—but they did not appear to be breeding.

+25. *STERCORARIUS CREPIDATUS*. Richardson's Skua.

This bird was common on the tundra, and was constantly to be seen in parties—from two to seven or eight—hunting the ground over for food ; but we found no eggs or young.

+26. *COLYMBUS ARCTICUS*. Black-throated Diver.

We saw several pairs of these birds and shot two. We also found one or two new nests, but no eggs had been laid in them when we left the island on July 16th.

+27. *COLYMBUS SEPTENTRIONALIS*. Red-throated Diver.

This bird was fairly numerous ; we shot two and obtained several eggs.

*List of Birds observed on Novaya Zemlya
(July 17th to 26th).*

+1. *ANTHUS CERVINUS*. Red-throated Pipit.

Several observed.

2. *CALCARIUS LAPPONICUS*. Lapland Bunting.

We saw a few of these birds, but evidently not common.

3. *PLECTROPHENAX NIVALIS*. Snow-Bunting.

This bird was fairly numerous in several places, and a few were scattered over even the most desolate parts. We saw young flying most days, and took nests with two fresh eggs on July 26th.

4. *OTOCORYS ALPESTRIS*. Shore-Lark.

Fairly numerous, but not so common as on Kolguev. Like the preceding species, the young birds were generally on the wing, yet we found a nest with one fresh egg on July 24th.

+ 5. *NYCTEA SCANDIACA*. Snowy Owl.

We saw six or eight of these birds and shot one, but found no nest of the year, although we carefully searched all likely places. There were several nests, one or two years old, on the tops of mounds and bluffs near the river running into the head of Belootcha Bay. The river of this name is not shown on any map we have seen, and no doubt the shallowness of the water at the head of the bay, combined with the absence of any secure anchorage, has prevented this inlet and district being explored by any but the Samoyeds, who have a settlement on the western shore of the bay. The Saxon River—as we named it after our yacht—is about 100 yards wide at the point it ceases to be affected by the tide, and flows in a south-westerly direction through Goose-land. It evidently contains a good supply of fish (*Salmo alpinus*) in the summer, as five Samoyeds from the settlement had gone up to fish. In connection with the Snowy Owl we may say that we never saw a live lemming during the whole time we were in the country. The holes and workings of these animals were fairly abundant in places; but few of these were fresh, and it certainly did not seem to be a good year for lemmings.

+ 6. *HALIAËTUS ALBICILLA*. White-tailed Eagle.

While fishing at Nechwatowa River a fine specimen of this bird came near us. Unfortunately two Glaucous Gulls drove it away before we were able to get a shot.

7. *ANSER SEGETUM*. Bean-Goose.

On July 19th we shot one on an island in Kostin Schar and captured two of its goslings. On the 20th three more were shot at Wilezek Lake, which were moulting their quill-feathers; as we were going some distance up Nechwatowa Lake, and the boat was already well laden with nine persons and gear, the birds were left on a rock—a mistake, for we found on our return the Glaucous Gulls had spoilt two for either skinning or cooking. Several Bean-Geese were also seen among the hills with their goslings; the latter appeared to be seven to ten days old. We were too late for eggs.

8. *ANSER ALBIFRONS*. White-fronted Goose.

One of this species was shot out of a party of five Geese on Saxon River on the 24th. They were all moulting.

9. *CYGNUS BEWICKI*. Bewick's Swan.

Four Swans were seen feeding together on the 26th near Saxon River by Feilden and H. Pearson, and thought to be Bewick's. The birds rose when the former was 100 yards off, so he could not get a shot. Four more Swans were seen the same day by Slater and C. Pearson in another part of the country, and pronounced by them to be Whoopers.

10. *HARELDA GLACIALIS*. Long-tailed Duck.

This was far the commonest Duck in the country, and we frequently saw flocks of 50 to 70, but we found no nests. The species was especially plentiful on Nechwatowa Lake. This lake is a fine sheet of water, about ten miles long and two to three wide, and is surrounded by an undulating country partly covered with coarse grass and moss. None of the hills near it are more than about 200 feet high, but some miles to the north there is a range over 1000 feet in height. In this lake are three islands—Maltzan, Klein, and Schmidt—and as H. and C. P. had visited a similar group in one of the Icelandic lakes last year with very good results, we felt confident, before leaving England, we should find these islands a perfect little Eldorado for eggs, if we could only land on them. We carefully searched all three, and the results were, alas, only three nests of Common Eider!

Schmidt Island is a peculiar, long, low one, composed entirely of blocks and boulders, and rising only 4 to 6 feet above the level of the water; it appeared to be just the place for Ducks to nest upon. There were two or three Purple Sandpipers on it and many Ducks—chiefly Long-tails—in the water around it, but only one nest of Common Eider could we find. The down of this nest was carefully covered with pebbles round its outer edge, to prevent the wind carrying it away. Part of the lake was still covered with ice 5 to 6 feet thick, and we were obliged to drag the boat over more than 200 yards of it. Still the two upper islands were free from ice, so that the birds could not have been disturbed recently by foxes.

11. *SOMATERIA MOLLISSIMA*. Common Eider.

This species was fairly numerous, and we obtained more eggs than we intended, for we shot many old birds from the nest in the hope of their proving to be *S. spectabilis*. However, the Ducks formed a welcome change from tinned meats, and are nearly as good as Mallard, if the skin is not eaten. Most of the eggs were fresh, and on July 25th we found more nests prepared for laying than containing eggs. This shows how late and generally abnormal the season was.

+12. *SOMATERIA SPECTABILIS*. King-Eider.

We saw nearly 200 males together at the western entrance to Kostin Schar, and for 24 hours were under the pleasant delusion that this was the only species present, so that we should have no difficulty in obtaining authentic eggs. It was a great disappointment, therefore, not to secure a single clutch. We hunted over most of the islands between Meshduschavskoe Island and the mainland, but with no result.

13. *MERGUS MERGANSER*. Goosander.

A number of old birds were seen, but no nests or young were taken.

+14. *ÆGIALITIS HIATICULA*. Ringed Plover.

This bird was fairly numerous. One nest was found with one egg remaining, the others being hatched.

†15. *EUDROMIAS MORINELLUS*. Dotterel.

On July 22nd we shot a very beautiful specimen of this bird (♀), the colouring being decidedly lighter than usual. On the 24th we took a clutch of three eggs and shot the bird (♂) from the nest; the latter was placed on the high part of an island at the head of Belootcha Bay.

†16. *STREPSILAS INTERPRES*. Turnstone.

We shot one or two specimens and also took young in down. These birds were only observed by us on South Goose-land.

†17. *TRINGA STRIATA*. Purple Sandpiper.

Not numerous in any one place, but to be seen in all the parts we visited. Several appeared to be breeding, though we failed to discover the eggs or young. We watched one bird for three-quarters of an hour in a storm of sleet, without getting it to settle, and it afterwards went before us for over a mile, behaving all the time as if we were close to the nest. This was the only species of the genus *Tringa* we saw; and we expect the Snipe &c. mentioned by some voyagers as being observed in Novaya Zemlya were really the Purple Sandpiper. As we never saw a mosquito in this country, and as insect-life appeared to be much less abundant than on Kolguev and in Russian Lapland, it seems probable that the Dunlin, Stints, &c. rarely go farther north than Waigatz. In most of the lists of birds observed in Novaya Zemlya no distinction is made between those from Waigatz and those from the south island of Novaya Zemlya. We were only able to visit a very small portion of the country, and so it is quite possible there may be breeding-places in more suitable localities.

†18. *STERNA MACRURA*. Arctic Tern.

A few seen on the ice about eight miles from land, July 3rd.

†19. *RISSA TRIDACTYLA*. Kittiwake.

Seen at same place, July 3rd.

†20. *LARUS GLAUCUS*. Glaucous Gull.

Several pairs of these Gulls were seen and some speci-

mens shot. We were evidently too late for eggs, but secured a pair of young in down near the mouth of Nechwatowa River, which we brought home alive. They are doing well and are very tame. One will follow her owner round the gardens and rapidly clears the earwigs out of the pots from the dahlia-sticks. Nothing comes amiss to them, from gorgonzola cheese to rats and mice. Some Great Black-backs from Norway are much more wild, and use their beaks with considerable effect when handled.

† 21. *LARUS AFFINIS*. Siberian Herring-Gull.

Two birds were seen on the ice on July 3rd which we thought belonged to this species.

22. *STERCORARIUS POMATORHINUS*. Pomatorhine Skua.

On our second attempt to land on Novaya Zemlya we succeeded in reaching the latitude of North Goose Cape July 2nd, but were obliged by the ice to return. Early on the 3rd a dense fog came down, causing us to steam slowly down the edge of the ice at a distance of from eight to ten miles from Goose-land. Birds were about the yacht in numbers all day—especially Brünnich's Guillemots—and we shot many specimens. Among the species seen that day were Nos. 18, 19, 21, 22, 23, 24, 29, and 30, not one of which was observed again during our stay on land from July 17th to July 27th. We shot two Pomatorhine Skuas on the 3rd and saw several others. This was one of the species the eggs and young in down of which we were most anxious to secure, but we never saw a Skua of this or any other species on the land of Novaya Zemlya. We think, from our observations, that some birds, especially the Skuas, do not breed in bad seasons. If this idea should prove a fact, it may be a provision of nature to prevent the Skuas becoming too numerous. They are well able to defend their eggs and young from the birds of prey found in the same countries, and equally capable of taking care of themselves; so the only foes they need fear are old age and deficiency of food. Each time we were at sea east of Vardö we observed a number of Skuas, and on July 29th, when returning

from Novaya Zemlya, we could count from 60 to 80—chiefly Long-tailed—at any time of the day round the ship.

23. STERCORARIUS PARASITICUS. Long-tailed Skua.

Seen at same time as No. 22.

24. FULMARUS GLACIALIS. Fulmar.

Seen as above.

25. COLYMBUS ADAMSI. White-billed Northern Diver.

Seen by H. P. on Wilczek Lake, but not shot. Also seen by C. E. P. and H. H. S. on a small lake near Belootcha Bay. In both cases the light-coloured bill could be clearly distinguished.

26. COLYMBUS ARCTICUS. Black-throated Diver.

Several seen, but none shot.

27. COLYMBUS SEPTENTRIONALIS. Red-throated Diver.

One was shot on Goose-land and several others were seen there, as well as in the other parts visited.

28. LOMVIA BRUENNICHI. Brünnich's Guillemot.

We found a large colony of these birds breeding on the island where we first landed, at the western entrance of Kostin Schar, and took a good series of eggs. All those taken on July 17th were nearly fresh, but those on July 23rd from the same place had 25 per cent. so much incubated that the young had to be cut out. The series show great variety in colour and size. In colour they closely resemble a selected collection of the Common Guillemot, and pass from pure white to the browns of the Razorbill and every variety of yellow and blue-greens, some being very handsomely blotched with black.

- + 29. URIA MANDTI.

Shot on July 3rd near the ice.

- + 30. MERGULUS ALLE. Little Auk.

Seen on same day.

XVIII.—*Remarks on Richardson's Merlin* (*Falco richardsoni*,
Ridgway). By W. E. BROOKS.

(Plate V.)

IN the first volume of the British Museum Catalogue of Birds (p. 409), published in 1874, Dr. Sharpe stated that he was unacquainted with this species, and appended a short extract from the Proc. Phil. Acad. 1870, p. 147, in which Mr. Ridgway described, as a male, an earthy-brown coloured bird. This description must refer to the immature male, for the adult male is of a beautiful blue-grey above, and somewhat resembles the European Merlin, but is generally lighter toned, and, I think, more handsome.

I have now before me three fine examples of *Falco richardsoni*, and will make a few remarks on them.

In this species the outer webs of the primaries are spotted with white in the adult male, and with ochraceous in the immature male and female. In the female and young male the feathers of the upper surface have pale rusty edges, so that on examining the bird closely it is not uniform brown, as it appears to be at some little distance. The female sent has also the brown of the upper surface strongly tinged with ash-grey, most conspicuous on the shoulders and rump. The number of light-coloured bars on the tail is variable. One which I examined—sexed as female, but which, on account of having only a 7·85 in. wing, I concluded was a male in first plumage—had six light cross-bars and a light tip; but the uppermost bar was rather indistinct nearly at the root of the feather, quite hidden, of course, by the tail-coverts. The male appears to have five light tail-bars and a light tip. In the mature male these cross-bars are of a beautiful bluish grey; while in young males and females they are slightly ochraceous white.

Description of specimens from Larimer County, Colorado (female shot Feb. 24th; the male, Dec. 15th):—

Wing of male 7·6 inches, of female 8·8. ♂, tail from

rump 4·7; ♀, 5·5. The mantle of the male is of a pale or blue-grey, as in Swainson's Harrier. Broad white borders to lower mantle-feathers, and some of the primaries are broadly edged with white. Both sexes have rufous nuchal collars. The male has five white tail-bars, shaded with blue-grey, and a white tip. The female has the same number. Two of the bars are more or less obscured by the upper tail-coverts. I have seen another example in female plumage with six whitish bars and a white tip, but this, I think, is abnormal.

The upper plumage of the female is earthy brown, with a strong wash of ash-grey, and all the feathers have yellowish-rusty light edges. The wing-feathers are barred on their inner webs and are spotted on the outer, more or less, with reddish buff, as in the wings of the female Kestrel. The rump of the female is almost a blue-grey, with white borders to the feathers.

This little Hawk appears to affect principally a central tract of country from Texas to Colorado, Wyoming, Montana, and on to the Saskatchewan country of the North-west Territories. To the west of the Rocky Mountain line of country it extends even to the Pacific coast, and has been obtained in Oregon near Salem. I saw it at Chilliwack, in British Columbia, two or three times; and an immature male was procured, and lost when my house was burned. It was of the light earthy-brown tone, and had an extra number of tail-bars. A description of it was sent to Mr. Stejneger, who said it was undoubtedly *Falco richardsoni*. Here I may observe that both *F. suckleyi* and *F. columbarius* occur in the Chilliwack country, and which of them is the more numerous I cannot say; but *F. richardsoni* is much rarer than either of the others. In Ontario and Eastern Canada only *F. columbarius* has been observed.

In a letter received from Mr. W. Brewster, of Cambridge, Mass., he says:—" *Falco richardsoni* is a common enough bird throughout most of the Rocky Mountain region. It breeds in the Saskatchewan country in such numbers that

one of our collectors took four sets of eggs in a single season. Nevertheless good skins are very hard to obtain. My way has been to buy all the 'Pigeon-Hawks' I could get from the central regions of the U. S., and take my chance of getting a *F. richardsoni* now and then among the common forms. Few field-collectors distinguish between the two species."

Mr. Brewster was right, for my first attempt was rewarded with a pale female *F. columbarius*; but in other cases a drawing of the central tail-feather of *F. richardsoni* prevented the arrival of more of that species. I had also three examples sent me by a friend for examination as "*F. richardsoni*," but they were merely large specimens of *F. columbarius*, a little weathered. In these three I noticed a variation in the number of tail-bars. No. 1 had three light bars and the tip; No. 2 four light bars and the tip; while No. 3 had five light bars and the tip, or the regulation number for *F. richardsoni*! But the tail-bars in *F. columbarius* are small and indistinct compared with those of the other bird, and have more of an oval spot at each side of the shaft. Then the whole coloration and general aspect of the three were decidedly as in *F. columbarius*, and not one of the specimens showed any nuchal collar. They were far too large, as well as much too dark, both on upper and under surfaces. Their first few primaries also had not any spots on their outer webs. This latter distinction my son Allan pointed out to me as the characteristic distinction, and I think he is right. But when once the general appearance of the little Hawk is understood, I think it would always be easy to separate it from *F. columbarius*, or anything else, apart from bars and wing-spots.

With the exception of the extract from Mr. Brewster's letter, I have not seen any other notice of its breeding.

[Mr. Brooks's specimens, from which the accompanying figures (Plate V.) have been taken, are now in the British Museum.—EDD.]



XIX.—On a Collection of Birds made by Mr. Alfred Sharpe in the Zomba District of Nyasaland. By Captain G. E. SHELLEY, F.Z.S.

MR. ALFRED SHARPE, H.B.M. Consul in Nyasaland, has placed at Mr. Selater's disposal a collection of birds made by him during the past year at Zomba, the seat of government of the district.

The land-birds were mostly obtained within a radius of ten miles from Zomba, which is situated on the slope of the mountain of the same name, about 2970 feet above the sea-level. The water-birds are from Lake Shirwa, which is some 25 miles distant.

The collection contains examples of 58 species, as follows :—

1. POLYBOROIDES TYPICUS.

Polyboroides typicus, Smith; Sclat. Ibis, 1864, p. 307; Sharpe, Cat. i. p. 48; id. ed. Layard's B. S. Afr. pp. 9, 795; Reichen. Vög. Deutsch-Ost-Afr. p. 85 (1894).

Zomba. A pair of these birds in fully adult plumage.

2. ACCIPITER MELANOLEUCUS.

Accipiter melanoleucus, Smith; Sharpe, Cat. i. p. 156; id. ed. Layard's B. S. Afr. p. 25; Reichen. Vög. Deutsch-Ost-Afr. p. 88.

Zomba. An immature bird in an interesting stage of plumage.

3. LOPHOAËTUS OCCIPITALIS.

Lophoaëtus occipitalis, Daud.; Shelley, Ibis, 1893, p. 6; 1894, p. 2.

Spizaëtus occipitalis, Reichen. Vög. Deutsch-Ost-Afr. p. 89, fig. 41.

Zomba. Two adult examples of this species.

4. ASTURINULA MONOGRAMMICA.

Asturinula monogrammica, Temm.; Shelley, Ibis, 1893, p. 6, 1894, pp. 2, 464; Reichen. Vög. Deutsch-Ost-Afr. p. 87.

Zomba. Two adult examples.

5. *MILVUS ÆGYPTIUS*.

Milvus ægyptius, Gm.; Shelley, Ibis, 1893, p. 7, 1894, p. 3; Reichen. Vög. Deutsch-Ost-Afr. p. 89.

Zomba. One adult bird.

6. *BUBO MACULOSUS*.

Bubo maculosus (Vicill.); Shelley, Ibis, 1894, pp. 3, 468; Reichen. Vög. Deutsch-Ost-Afr. p. 96.

Zomba. One specimen.

7. *MEROPS SUPERCILIOSUS*.

Merops superciliosus, Linn.; Shelley, Ibis, 1893, p. 7, 1894, p. 4; Reichen. Vög. Deutsch-Ost-Afr. p. 135.

Zomba. A specimen in full breeding-plumage.

8. *DICROCERCUS HIRUNDINACEUS*.

Dicrocercus hirundinaceus (Licht.); Shelley, Ibis, 1894, p. 5; Reichen. Vög. Deutsch-Ost-Afr. p. 136.

Zomba. Two specimens.

9. *CERYLE MAXIMA*.

Ceryle maxima (Pall.); Shelley, Ibis, 1894, p. 5; Reichen. Vög. Deutsch-Ost-Afr. p. 130.

Zomba. An adult female.

10. *HALCYON ORIENTALIS*.

Halcyon orientalis, Peters; Sharpe, Cat. xvii. p. 238; Shelley, Ibis, 1893, p. 8, 1894, p. 6; Reichen. Vög. Deutsch-Ost-Afr. p. 133.

Zomba. One specimen.

11. *RHINOPOMASTES CYANOMELAS*.

Rhinopomastes cyanomelas (Vieill.); Shelley, Ibis, 1893, p. 8, 1894, p. 6; Reichen. Vög. Deutsch-Ost-Afr. p. 138.

Zomba. One adult specimen.

12. *TURACUS LIVINGSTONII*.

Turacus livingstonii, Gray; Shelley, Ibis, 1893, p. 9, 1894, pp. 7, 467; Reichen. Vög. Deutsch-Ost-Afr. p. 103.

Zomba, October. One specimen.

13. *COCCYSTES HYPOPINARIUS*.

Coccytes hypopinarius, Cab. & Heine; Shelley, Ibis, 1893, p. 10; 1894, p. 8.

Zomba. Two specimens, both typically coloured.

This species apparently never ranges so far north as 10° S. lat.

14. *DENDROPICUS ZANZIBARI*.

Dendropicus zanzibari, Malh.; Shelley, Ibis, 1893, p. 12; 1894, pp. 9, 467.

Dendropicus hartlaubi (nec Malh.); Reichen. Vög. Deutsch-Ost-Afr. p. 122.

Zomba. A fine adult female: wing 3·4 inches.

All the specimens of this Woodpecker that I have seen from Nyasaland are very similar in size and belong to this small form. *D. cardinalis*, Hargitt (Cat. B. xviii. p. 295), the largest form, has the wing-measurements from 3·6 in the female to 3·75 in the male, and appears to me a fairly well-marked southern form not yet known from north of the Zambesi and Quanza rivers, while *D. zanzibari* extends north from these rivers to Lamu in East Africa and the Congo in West Africa, as has already been pointed out by Hargitt in his admirably worked-out catalogue.

15. *TURDUS LIBONYANUS*.

Turdus libonyanus (Smith); Shelley, Ibis, 1893, p. 12, 1894, pp. 9, 468; Reichen. Vög. Deutsch-Ost-Afr. p. 233.

Zomba. One specimen.

16. *TURDUS MILANJENSIS*.

Turdus milanjensis, Shelley, Ibis, 1893, p. 12; 1894, p. 9.

Zomba. One specimen.

This very well-marked species is known only from Nyasaland, where it is found on the highlands of Mount Zomba and Mount Milanji.

17. *PRATINCOLA TORQUATA*.

Pratincola torquata (Linn.); Shelley, Ibis, 1893, p. 15; 1894, p. 12.

Zomba. One specimen.

This species does not appear to pass north of 10° S. lat., which I consider to be the northern limit of the South African Subregion.

18. PYCNONOTUS LAYARDI.

Pycnonotus layardi, Gurney; Shelley, Ibis, 1893, p. 13, 1894, p. 468; Reichen. Vög. Deutsch-Ost-Afr. p. 207.

Zomba. One specimen.

19. CRINIGER FUSCICEPS.

Xenocichla fusciceps, Shelley, Ibis, 1893, p. 13; 1894, pp. 10, 468, pl. i. fig. 2.

Milanji, Oct. One specimen.

It appears to me that the real characters for distinguishing the genus *Xenocichla* from the genus *Criniger* may be summed up as follows :—

- a. Bill deeper than broad at nostrils and much compressed at the sides; culmen nearly straight, and the keel of the lower mandible distinctly curved upwards *Xenocichla*.
- b. Bill wider than deep at nostrils and not much compressed at the sides throughout its length; culmen strongly curved; keel of the lower mandible horizontal, never distinctly curved upwards. *Criniger* group.

The genus *Xenocichla*, I consider, should consist of only the following six species:—

1. *X. syndactyla* (the type); 2. *X. poliocephala*; 3. *X. xavieri* not known to me); 4. *X. notata*; 5. *X. eximia*; 6. *X. canicapilla*.

20. MELOCICHLA ORIENTALIS.

Cisticola orientalis, Sharpe; Shelley, Ibis, 1893, p. 15; 1894, p. 12.

Melocichla orientalis, Reichen. Vög. Deutsch-Ost-Afr. p. 220.

Zomba. One specimen.

It appears to me that the genus *Melocichla* should be recognized as distinct from *Cisticola*.

The range of this genus is from Accra and Lado south to Benguela and the Zambesi.

Three rather doubtful subspecies have been recognized :—

1. *Drymæca mentalis*, Fraser, P. Z. S. 1880, p. 16 (Accra).
2. *Cisticola grandis*, Bocage, Journ. Lisb. 1880, p. 56

(Caconda) = *Cisticola meridionalis*, Sharpe, Cat. B. M. vii. p. 243 (1883) (Chinchonxo).

3. *Cisticola orientalis*, Sharpe, t. c. p. 245 (Pangani R.).

In attempting a classification of the birds of Africa I should recognize a subfamily *Cisticolinæ*, to include the genera in the following order:—

- a. Bill longer and more slender &c. 1. *Orthotomus*;
2. *Rectirostrum*; 3. *Calamonastes*.
- b. Bill shorter and stouter &c.
- a'. Tail-feathers ordinary.
- a''. Tail of 10 feathers 4. *Burnesia*;
5. *Prinia*; 6. *Debrowskia* (not known to me).
- b''. Tail of 12 feathers.
- a'''. Tail-feathers more slender &c. 7. *Spiloptila*.
- b'''. Tail-feathers much broader.
- a⁴. Smaller; wing less than 2·8 inches;
tail-feathers generally with a dark
subterminal bar 8. *Cisticola*.
- b⁴. Larger; wing not less than 2·8 inches;
tail with pale ends and no dark sub-
terminal bar.
- a⁵. Upper parts uniform.
- a⁶. General plumage rufous brown;
with a black moustachial band .. 9. *Melocichla*.
- b⁶. General plumage brownish black;
with no black moustachial band
and with broad white ends to the
tail-feathers 10. *Pinarornis*.
- b⁵. Crown and mantle mottled; rump
and upper tail-coverts bright rufous. 11. *Chætops*.
- b'. Tail wedge-shaped, the feathers stiffened with
spiny shafts and loose webs; tail of 10
feathers &c. 12. *Sphenæacus*;
13. *Dromæocercus*.

21. EREMOMELA SCOTOPS.

Eremomela scotops, Sundev.; Shelley, Ibis, 1893, p. 16;
1894, p. 13.

Zomba. One specimen.

22. CINNYRIS FALKENSTEINI.

Cinnyris falkensteini, Reichen.; Shelley, Ibis, 1893, p. 16,
1894, p. 13; Reichen. Vög. Deutsch-Ost-Afr. p. 212.

Zomba. One full-plumaged male.

23. TARSIGER JOHNSTONI.

Pogonocichla johnstoni, Shelley, *Ibis*, 1893, p. 18; 1894, p. 14.

Milanji, Oct. Two specimens.

As the African genus *Pogonocichla* (Cab. 1847) cannot be separated from the Asiatic genus *Tarsiger* (Hodgs. in Gray's Zool. Miscell. 1844, p. 83), the name *T. orientalis* for an African species is an unfortunate one.

24. TERPSIPHONE PERSPICILLATA.

Terpsiphone perspicillata (Swains.); Shelley, *Ibis*, 1893, p. 18, 1894, p. 15; Reichen. Vög. Deutsch-Ost-Afr. p. 149. Zomba. One specimen.

25. PELICINIUS BERTRANDI.

Laniarius bertrandi, Shelley, *Ibis*, 1894, pp. 15, 469, pl. 2. fig. 2.

Milanji. One adult male.

It appears to me that the genus *Pelicius* (Boie, Isis, 1826, p. 973, with the type *P. gutturalis*) comprises a distinct little group of seven Bush-Shrikes, and belongs to the section with the upper parts mostly green, which I propose to arrange as follows:—

	Type.
<i>Pelicius</i> , Boie, Isis, 1826, p. 973 . . .	<i>P. gutturalis</i> .
<i>Chlorophoneus</i> , Cab. Mus. Hein. i. p. 7	
(1850)	<i>P. rubiginosus</i> .
<i>Archolestes</i> , Cab. t. c. p. 71	<i>P. olivaceus</i> .
<i>Neolestes</i> , Cab. J. f. O. 1875, p. 327, pl. 1.	
fig. 1	<i>P. torquatus</i> .

Key to the Genera of green-backed Bush-Shrikes.

- a. Wings with no yellow tips to the secondaries;
generally with a black gorget 1. *Pelicius*.
- b. Wings with yellow tips to the secondaries; never
with a black gorget.
 - a'. Breast yellow or olive 2. *Malaconotus*.
 - b'. Breast ashy white 3. *Nicator*.

Key to the Species of the Genus *Pelicius*.

- a.* With a broad black gorget.
- a'.* With broad yellow ends to the tail-feathers.
Throat, centre of breast, and under tail-coverts
yellow 1. *gutturalis*.
- b'.* With no broad yellow ends to the tail-feathers.
- a''.* Throat vermilion or crimson; under tail-coverts washed with the same colour. Upper parts and sides of body uniform green, with yellow on sides of forehead.
- a'''.* Centre of breast and under tail-coverts
yellow 2. *quadricolor*.
- b'''.* Centre of breast and under tail-coverts
maroon-red 3. *viridis*.
- b''.* Throat, sides of head, and the breast whitish.
Crown and back of neck grey; remainder of
the upper parts uniform green 4. *torquatus*.
- b.* With no black gorget. The greater part of the
sides of the head and neck black in the males,
grey in the females.
- c'.* Crown and back of neck grey, remainder of the
upper parts green; abdomen and under tail-coverts
white; throat and chest shaded with
rufous buff.
- c''.* With a white eyebrow and the white in front
of the eye immediately next to the grey of the
crown 5. *rubiginosus*.
- d''.* With no distinct white eyebrow, and the
black extending round the forehead, separating
the white from the grey of the crown . 6. *bertrandi*.
- d'.* Upper parts generally, and sides of breast, green.
Throat, centre of breast, under tail-coverts, and
a patch, in front of the black of the head,
yellow 7. *olivaceus*.

26. *LANIARIUS MOSAMBICUS*.

Dryoscopus sticturus, Shelley, Ibis, 1893, p. 20.

Dryoscopus mosambicus, Fisch. & Reichen.; Shelley, Ibis, 1894, p. 16.

Dryoscopus major, Reichen. Vög. Deutsch-Ost-Afr. p. 163.

Zomba. One specimen.

As regards *Laniarius* and *Dryoscopus*, they are, in my opinion, two very well-marked genera, which may be separated as follows :—

- a. Sexes alike in plumage. Entire back blackish. Wing more rounded ; tip of second primary falls considerably short of the tip of the secondaries 1. *Laniarius*.
- b. Sexes dissimilar. Back never uniform blackish ; the males always, and often the females, have the lower back covered with white or grey fluffy feathers, contrasting strongly with the mantle. Wings less rounded ; tip of second primary reaches about to the tip of the secondaries. Females differ from the males, either totally and have a brownish plumage, or else are distinguished by having the sides of the forehead white 2. *Dryoscopus*.

27. TELEPHONUS SENEGALUS.

Telephonus senegalus (Linn.) ; Shelley, Ibis, 1893, p. 20, 1894, p. 18 ; Reichen. Vög. Deutsch-Ost-Afr. p. 158.

Zomba. Two specimens.

28. ORIOLOUS LARVATUS.

Oriolus larvatus, Licht. ; Shelley, Ibis, 1893, p. 22 ; 1894, pp. 19, 470.

Oriolus rolleti, Reichen. Vög. Deutsch-Ost-Afr. p. 168.

Zomba. One specimen.

I cannot agree that *O. rolleti* is even subspecifically distinct from *O. larvatus*. From an examination of a large series in the British Museum, I have come to the conclusion that there is no distinctive character in the plumages of the specimens from South and Eastern Africa, and *O. larvatus* probably ranges northward in West Africa to the Cameroons. On the Gold Coast a subspecies, *O. brachyrhynchus* (possibly a local form), may be recognized by the mantle being slightly more olive and the size rather smaller : wing 4·3 to 4·6, culmen and tarsus 0·85 to 0·9. Birds from S. Africa, south of the Zambesi, measure : wing 5·0 to 5·3. Birds from E. Africa, north of the Zambesi : wing 4·7 to 5·3.

29. AMYDRUS MORIO.

Amydrus morio (Linn.) ; Shelley, Ibis, 1893, p. 22, 1894, p. 19 ; Reichen. Vög. Deutsch-Ost-Afr. p. 173.

Zomba. One female specimen.

30. HYPHANTORNIS NIGRICEPS.

Hyphantornis nigriceps, Layard ; Shelley, Ibis, 1893, p. 23 ; 1894, p. 19.

Ploceus nigriceps, Reichen. Vög. Deutsch-Ost-Afr. p. 181.

Zomba. Two adult males in full plumage.

31. XANTHOPHILUS XANTHOPS.

Hyphantornis xanthops, Hartl. ; Shelley, Ibis, 1893, p. 23 ; 1894, p. 19.

Ploceus xanthops, Reichen. Vög. Deutsch-Ost-Afr. p. 181.

Zomba. One specimen.

32. VIDUA PRINCIPALIS.

Vidua principalis (Linn.) ; Shelley, Ibis, 1893, p. 25 ; 1894, p. 21.

Vidua serena, Reichen. Vög. Deutsch-Ost-Afr. p. 193.

Zomba. One specimen.

33. COLIIPASSER ARDENS.

Penthetria ardens (Bodd.) ; Shelley, Ibis, 1893, p. 25 ; 1894, pp. 21, 471.

Coliuspasser rubritorques, Reichen. Vög. Deutsch-Ost-Afr. p. 192.

Zomba. One immature specimen.

With regard to the name of this genus, Dr. R. B. Sharpe's objection to the use of the oldest one (Cat. B. Brit. Mus. xiii. p. 215) may be overcome by uniting the two compounds into one word, as *Colii-passer*.

34. PYROMELANA FLAMMICEPS.

Pyromelana flammiceps (Swains.) ; Shelley, Ibis, 1893, p. 25, 1894, p. 21 ; Reichen. Vög. Deutsch-Ost-Afr. p. 190.

Zomba. Three full-plumaged males.

35. PYROMELANA XANTHOMELÆNA.

Pyromelana xanthomelæna (Rüpp.) ; Shelley, Ibis, 1893, p. 25 ; 1894, p. 21.

Orynx xanthomelas, Reichen. Vög. Deutsch-Ost-Afr. p. 190.

Zomba. Two adult males.

36. *ANTHUS RUFULUS*.

Anthus rufulus, Vieill.; Shelley, Ibis, 1893, p. 27; 1894, p. 23.

Anthus cinnamomeus, Reichen. Vög. Deutsch-Ost-Afr. p. 198.

Milanji Plateau, Oct. One specimen.

37. *VINAGO DELALANDII*.

Treron delalandii (Bp.); Shelley, Ibis, 1893, p. 28; 1894, pp. 23, 473.

Vinago delalandii, Salvad. Cat. xxi. p. 24; Reichen. Vög. Deutsch-Ost-Afr. p. 71.

Zomba. One specimen.

38. *TURTUR SEMITORQUATUS*.

Turtur semitorquatus (Rüpp.); Shelley, Ibis, 1893, p. 28, 1894, p. 24; Salvad. Cat. xxi. p. 416; Reichen. Vög. Deutsch-Ost-Afr. p. 68.

Zomba. One specimen.

39. *GALLINULA CHLOROPUS*.

Gallinula chloropus (Linn.); Shelley, Ibis, 1894, p. 474; Sharpe, Cat. xxiii. p. 169; Reichen. Vög. Deutsch-Ost-Afr. p. 50.

Lake Shirwa. One specimen.

40. *VANELLUS LEUCOPTERUS*.

Vanellus crassirostris, Shelley, Ibis, 1894, p. 475.

Vanellus leucopterus, Reichen. J. f. O. 1889, p. 265; id. Vög. Deutsch-Ost-Afr. p. 36.

Defilippia burrowsii, Sharpe, Bull. B. O. Club, vol. iv. p. iv (1894); Ibis, 1895, p. 138.

Lake Shirwa. One specimen.

41. *TOTANUS NEBULARIUS*, Gunner.

Totanus canescens, Sharpe, ed. Layard's B. S. Afr. p. 687.

Lake Shirwa. One specimen, No. 9.

42. HYDROCHELIDON LEUCOPTERA.

Hydrochelidon leucoptera (Meisner & Schinz) ; Shelley, Ibis, 1894, pp. 27, 476 ; Saunders, Cat. xxv. p. 8.
Lake Shirwa. Two specimens.

43. LARUS CIRRHOCEPHALUS.

Larus phaeocephalus, Sw. ; Shelley, Ibis, 1894, pp. 27, 476 ; Reichen. Vög. Deutsch-Ost-Afr. p. 20.
Larus cirrhocephalus, Vicill. ; Saunders, Cat. xxv. p. 198.
Lake Shirwa. Two specimens.

44. ARDEA CINEREA.

Ardea cinerea, Linn. ; Sharpe, ed. Layard's B. S. Afr. p. 708 ; Reichen. Vög. Deutsch-Ost-Afr. p. 65.
Lake Shirwa. Two adult specimens.

45. ARDEA PURPUREA.

Ardea purpurea, Linn. ; Shelley, Ibis, 1894, p. 27 ; Reichen. Vög. Deutsch-Ost-Afr. p. 65.
Lake Shirwa. One adult specimen.

46. ARDEA ARDESIACA.

Ardea ardesiaca, Wagl. ; Shelley, Ibis, 1894, p. 27 ; Reichen. Vög. Deutsch-Ost-Afr. p. 65.
Lake Shirwa. One specimen.

47. HERODIAS INTERMEDIA.

Herodias intermedia (Wagl.) ; Sharpe, ed. Layard's B. S. Afr. p. 714 ; Reichen. Vög. Deutsch-Ost-Afr. p. 67.
Mpimbi, July. One specimen.

48. HERODIAS RALLOIDES.

Ardeola comata, Shelley, Ibis, 1894, pp. 27, 476.
Ardeola ralloides (Scop.) ; Reichen. Vög. Deutsch-Ost-Afr. p. 64.
Lake Shirwa. One adult.

49. NYCTICORAX NYCTICORAX.

Nycticorax griseus, Shelley, Ibis, 1893, p. 29 ; 1894, p. 27.
Nycticorax nycticorax (Linn.) ; Reichen. Vög. Deutsch-Ost-Afr. p. 63.
Lake Shirwa. One specimen.

50. ANASTOMUS LAMELLIGERUS.

Anastomus lamelligerus, Temm.; Shelley, Ibis, 1894, p. 476; Reichen. Vög. Deutsch-Ost-Afr. p. 57.
Lake Shirwa. Two specimens.

51. DENDROCYGNA VIDUATA.

Dendrocygna viduata (Linn.); Shelley, Ibis, 1894, p. 28; Reichen. Vög. Deutsch-Ost-Afr. p. 27; Salvad. Cat. xxvi. p. 202.
Lake Shirwa, Sept. Two specimens.

52. SARCIDIORNIS MELANONOTA.

Sarcidiornis africanus, Sharpe, ed. Layard's B. S. Afr. p. 752.
Sarcidiornis melanotos, Reichen. Vög. Deutsch-Ost-Afr. p. 27.
Sarcidiornis melanonota (Temm.); Salvad. Cat. xxvii. p. 54.
Lake Shirwa. Two specimens.

53. QUERQUEDULA PUNCTATA.

Querquedula hottentotta, Shelley, Ibis, 1894, pp. 28, 478.
Anas hottentotta, Reichen. Vög. Deutsch-Ost-Afr. p. 26.
Nettion punctatum (Burch.); Salvad. Cat. xxvii. p. 265.
Lake Shirwa, Sept. Six specimens.

54. NYROCA BRUNNEA.

Aythya capensis, Shelley, Ibis, 1894, p. 478.
Fuligula capensis, Reichen. Vög. Deutsch-Ost-Afr. p. 26.
Nyroca brunnea, Eyt.; Salvad. Cat. xxvii. p. 351.
Lake Shirwa. Three specimens.

55. THALASSORNIS LEUCONOTA.

Thalassornis leuconota, Sharpe, ed. Layard's B. S. Afr. p. 761; Salvad. Cat. xxvii. p. 436.
Lake Shirwa. Two specimens.

56. PELECANUS MINOR.

Pelecanus mitratus, Sharpe, ed. Layard's B. S. Afr. p. 776.
Pelecanus, sp. inc., Kirk, Ibis, 1864, p. 338.
Lake Shirwa. Three specimens.

57. PHALACROCORAX AFRICANUS.

Phalacrocorax africanus (Gm.) ; Shelley, Ibis, 1894, p. 28 ; Reichen. Vög. Deutsch-Ost-Afr. p. 22.

Lake Shirwa. Two specimens.

58. PODICEPS CAPENSIS.

Tachybaptus fluviatilis, Shelley, Ibis, 1894, p. 478.

Colymbus fluviatilis, Reichen. Vög. Deutsch-Ost-Afr. p. 17.

Podiceps capensis, "Licht."; Salvad. Ann. Mus. Civ. Gen. 1884, p. 236.

Lake Shirwa. One specimen.

XX.—Notes on a small Collection of Birds from
Mashonaland. By GUY A. K. MARSHALL.

I HAVE forwarded to my friend, Dr. Bowdler Sharpe, a small collection of birds from the vicinity of Salisbury, in Mashonaland, and, at his request, I have added a few notes on the habits and soft parts of some of the species.

1. ASTURINULA MONOGRAMMICA.

Asturinula monogrammica (T.) ; Sharpe, ed. Layard's B. S. Afr. p. 42 (1875).

No. 2. Salisbury, July 27, 1894. Legs and cere vermilion; bill black; iris brown; anterior portion of palate vermilion, posterior portion black. In crop, one small snake and one scorpion. Native name "Rgwódsi" (meaning "Hawk" generally, I think).

2. MEROPS APIASTER.

Merops apiaster, Linn. ; Sharpe, t. c. p. 96.

No. 9. ♀. Salisbury, Nov. 7, 1894. Bill black; legs slate; iris carmine. In stomach hymenoptera only. Native name "Makwírokwíro."

3. HALCYON PALLIDIVENTRIS.

Halcyon pallidiventris, Cab. ; Sharpe, Cat. B. xvii. p. 235.

No. 21. ♂. Salisbury, Dec. 19, 1894. Bill and legs vermilion, claws dark horn-colour; iris dark brown. In stomach, remains of a large grasshopper (*Clonia wahlbergi*)

and one beetle. I fancy this Kingfisher cannot be very common, as the Kafirs have no name for it. I saw it on 19th Dec. for the first time, and shot it in the bush a long way from water. The Kafirs say that it is entirely a bush-bird.

4. COCCYSTES GLANDARIUS.

Coccystes glandarius (Linn.); Sharpe, t. c. p. 157.

No. 14. ♂ ad. Salisbury, Nov. 11, 1894. Iris dark grey; bill black, the lower mandible flesh-colour beneath; feet dark slate-colour. In stomach a large hairy caterpillar. Native name "Rgwódsi" (meaning "Hawk," for which the bird is mistaken by the Kafirs).

5. MELANOBUCCO TORQUATUS.

Melanobucco torquatus (Dumont); Shelley, Cat. B. Brit. Mus. xix. p. 24 (1891).

Pogonorrhynchus torquatus, Sharpe, ed. Layard's B. S. Afr. p. 172.

No. 33. ♀. Salisbury (5000 ft.), April 15, 1895. Bill blackish; legs dark slate; iris dull crimson. In stomach, berries containing large and very hard stones.

6. DENDROPICUS CARDINALIS.

Dendropicus cardinalis (Gm.); Sharpe, ed. Layard's B. S. Afr. p. 190 (1875).

No. 1. ♂ ad. Salisbury, July 26, 1894. Bill and legs black; iris brown.

No. 2. ♂ ad. Salisbury, April 14, 1895. Bill black; legs dark slate; iris dull crimson. In stomach, two caterpillars and insects. Native name "Mupúpu."

7. PYCNONOTUS LAYARDI.

Pycnonotus layardi, Gurney; Sharpe, t. c. p. 207.

No. 29. ♀. Salisbury, April 14, 1895. Bill black; legs black; iris brown. In stomach insects.

8. THAMNOLEA SUBRUFIPENNIS.

Thamnoleæ subrufipennis, Reichen. Vög. Deutsch-Ost-Afr. p. 234.

No. 26. ♂ ad. Salisbury, April 12, 1895. Legs and bill

black; iris brown. In stomach insects (chiefly ants) and a few small seeds.

No. 30. ♀ ad. Salisbury, April 14, 1895. Bill and legs black; iris brown. In stomach, insects and a few small seeds.

9. *SAXICOLA PILEATA*.

Saxicola pileata (Gm.); Sharpe, t. c. p. 238.

No. 10. ♀. Salisbury, Nov. 7, 1894. Bill black; legs black; iris brown. In stomach diptera. Native name "Sgwánsngwe."

10. *CISTICOLA TERRESTRIS*.

Cisticola terrestris (Smith); Sharpe, t. c. pp. 279, 824.

No. 34. ♂. Salisbury (5000 ft.), April 16, 1895. Upper mandible blackish, lower pale flesh-colour; legs pale flesh-colour; iris light yellowish brown. In stomach one young locust, one spider, and a few small coleoptera.

11. *CISTICOLA CINERASCENS*.

Cisticola cinerascens, Heugl.; Sharpe, Cat. B. Brit. Mus. vii. p. 248.

No. 23. Salisbury (5000 ft.), March 11, 1895. Upper mandible blackish, lower flesh-colour; iris yellow; legs flesh-colour.

12. *PHYLLOSCOPUS TROCHILUS*.

Phylloscopus trochilus (Linn.); Sharpe, ed. Layard's B. S. Afr. p. 296.

No. 15. ♀. Salisbury, Nov. 11, 1894. Bill brownish, lighter below; legs flesh-colour; iris brown. Stomach almost empty, contents unrecognizable. Native name "Nimba."

13. *CINNYRIS GUTTURALIS*.

Cinnyris gutturalis (Linn.); Sharpe, t. c. p. 311.

No. 25. ♂. Salisbury, April 12, 1895. Bill black; legs black; iris brown. In stomach small insects.

14. *CINNYRIS CHALYBÆUS*.

Cinnyris chalybæus (Linn.); Sharpe, t. c. p. 314.

No. 28. ♂. Salisbury, April 14, 1895. Bill black; legs black; iris brown. In stomach larvæ of micro-lepidoptera.

15. ZOSTEROPS ANDERSSONI.

Zosterops anderssoni, Shelley, Bull. B. O. Club, i. p. v (1892).

No. 31. ♂ ♀. Salisbury, April 14, 1895. Bill black; legs dark slate; iris hazel. In stomach, bits of fig and a few small insects.

16. ANTHOSCOPUS CAROLI.

Ægithalus caroli, Sharpe, Ibis, 1871, p. 415; Gadow, Cat. B. Brit. Mus. viii. p. 71, pl. i. fig. 1.

Anthoscopus caroli, Sharpe, ed. Layard's B. S. Afr. p. 327.

No. 8. ♀. Salisbury, Nov. 5, 1894. Iris brown; legs slate; bill blackish, lighter apically. In stomach, minute insects and larvæ. Native name "Wowódso."

17. PARUS AFER.

Parus afer, Gm.; Sharpe, t. c. p. 329.

No. 27. ♂. Salisbury, April 12, 1895. Bill black; legs light slate; iris brown. In stomach small insects.

18. SALPORNIS SALVADORII.

Salpornis salvadorii (Bocage); Sharpe, t. c. p. 835.

No. 3. Ad. Salisbury, Oct. 10, 1894. Upper mandible black, lower yellowish; legs black; iris brown. Native name "Mangwídso."

19. MUSCICAPA GRISOLA.

Muscicapa grisola, Linn.; Sharpe, t. c. p. 338.

No. 17. ♀. Salisbury, Nov. 18, 1894. Iris brown; legs and bill black. In stomach insects. Native name "Nimba."

20. PACHYPRORA MOLITOR.

Batis molitor (Hahn & Küster); Sharpe, t. c. p. 348.

No. 5. Ad. Salisbury, Oct. 11, 1894. Bill and legs black; iris bright yellow. Native name "Mabóta."

21. HYLIOTA AUSTRALIS.

Hyliota australis, Shelley; Sharpe, t. c. p. 836.

No. 4. Ad. Salisbury, Oct. 11, 1894. Bill and legs black; iris brown. Native name "Jigurugúta."

22. TELEPHONUS SENEGALUS.

Laniarius senegalus (Linn.) ; Sharpe, t. c. p. 394.

No. 22. ♂. Salisbury, Dec. 19, 1894. Bill black ; legs very pale grey ; iris light grey. In stomach insects. Native name "Nyamkongira."

23. NILAUS BRUBRU.

Nilaus brubru, Sharpe, t. c. p. 397.

No. 35. ♂. Salisbury (5000 ft.), April 16, 1895. Bill—upper mandible black, lower mandible slate, apex blackish ; legs slate ; iris brown. In stomach coleoptera.

24. BRADYORNIS MURINUS.

Bradyornis murinus, Finsch & Hartl. ; Sharpe, t. c. p. 844.

No. 36. ♂. Salisbury (5000 ft.), April 25, 1895. Bill black ; legs black ; iris dark brown. In stomach a locust.

25. PRIONOPS TALACOMA.

Prionops talacoma, Smith ; Sharpe, t. c. p. 406.

No. 20. Juv. (? ♂). Salisbury, Dec. 12, 1894. Bill black ; legs salmon-pink ; iris brown. In stomach, a caterpillar and moths' eggs. Native name "Madshgwé-dshgwé."

This bird is always found in small flocks of four or six in the bush. These always keep close together, sitting on low bushes or low down on the trunks of trees. They seem to feed chiefly on caterpillars. Their note is a sort of chatter, like "ishqwe," repeated quickly four or five times.

26. BUCHANGA ASSIMILIS.

Buchanga assimilis (Bechst.) ; Sharpe, t. c. p. 408.

No. 7. ♂ juv. Salisbury, Nov. 5, 1894. Bill black ; legs black ; iris brown. In stomach coleoptera. Native name "Mindirira."

27. ORIOLUS NOTATUS.

Oriolus notatus, Peters ; Sharpe, t. c. p. 412.

No. 32. ♂. Salisbury (5000 ft.), April 15, 1895. Bill dark flesh-colour ; legs dark slate ; iris scarlet. In stomach, two hawk-moth larvæ and two large stones of berries. Large intestine infested with worms.

28. PYROMELANA XANTHOMELÆNA.

Pyromelana xanthomelæna (Rüpp.); Sharpe, Cat. B. Brit. Mus. xiii. p. 239 (1890).

No. 19. ♂ ad. Salisbury, Dec. 12, 1894. Upper mandible blackish, lower mandible very pale fleshy; iris brown. In stomach insects.

29. PETRONIA PETRONELLA.

Petronia petronella (Licht.); Sharpe, t. c. p. 481.

No. 24. ♀. Salisbury, March 14, 1895. Bill slate, lower mandible lighter; legs slate; iris light brown. In stomach young locust.

30. POLIOSPIZA GULARIS.

Poliospiza gularis (Smith); Sharpe, t. c. p. 482.

No. 12. ♂. Salisbury, Nov. 10, 1894. Bill dark slate; legs dark slate; iris light brown. In stomach small seeds. Native name "Nimba."

31. SERINUS ANGOLENSIS.

Serinus angolensis (Gm.); Sharpe, Cat. B. Brit. Mus. xii. p. 367 (1888).

Crithagra angolensis, Sharpe, ed. Layard's B. S. Afr. p. 484.

No. 18. ♂. Salisbury, Dec. 12, 1894. Upper mandible blackish, lower mandible light fleshy; legs and feet pale horny; iris brown. In crop small black seeds. Native name "Chisha shásha."

32. ANTHUS PYRRHONOTUS.

Anthus pyrrhonotus (V.); Sharpe, t. c. p. 537.

No. 6. Ad. Salisbury, Oct. 20, 1894. Upper mandible black, lower mandible yellow, black at tip; palate bright yellow; iris brown.

XXI.—On the Geographical Distribution of *Sterna dougalli*, Mont. By HOWARD SAUNDERS.

IN the last Part of this volume (p. 99) a [?] was appended to No. 36, *Sterna dougalli*, in Mr. Whitaker's list of Tunisian birds, followed by an Editorial footnote to the

effect that the only grey Tern observed by Mr. Aplin was *Gelochelidon anglica*. For these marks of scepticism I alone am responsible. There was no time to write to Mr. Whitaker and receive his reply before going to press. A slip of the pen seemed not improbable, for the Gull-billed Tern is sometimes nearly white, and, when fresh, shows a rosy tint on the underparts; while it seemed very unlikely that the Roseate Tern should breed in Tunisia. The species was hardly known in any part of the Mediterranean: Mr. C. A. Wright had not obtained it in Malta; Prof. Giglioli could only enumerate three or four examples obtained since 1822 along the coast of Liguria; and the only Mediterranean specimen I had ever seen was one from the vicinity of Menorca, in Canon Tristram's collection. Add to these facts, that at least fifty birds, erroneously identified by accredited ornithologists as Roseate Terns, had come under my notice, and some excuse may be found for my incredulity.

To convince the unbeliever, Mr. Whitaker promptly sent over two beautiful specimens of *Sterna dougalli* in full breeding-plumage; one of these, as he had intimated, unusually white. Of course I wrote at once to apologize for doubting his identification; and he is to be congratulated on having made known a breeding-place which is not only new, but which also forms an important link in the chain leading to the haunts of this species in the tropics and the southern hemisphere.

It is a matter of common knowledge that the Roseate Tern was described by Montagu from a specimen obtained by Dr. MacDougall on the Cumbræ in the Firth of Clyde, and that the species annually visits certain portions of the coasts of the United Kingdom for the purposes of reproduction. It is an oceanic Tern, nowhere numerically abundant, and remains with us for a very short time, being the last of the Terns to arrive and the very first to leave, and the young are, consequently, very rare in collections. It is, moreover, unusually intolerant of interference, and if the Common Tern (*S. fluviatilis*) becomes too numerous in its favourite haunts, it yields, almost

without a struggle, and goes elsewhere. This has been proved by Dr. Bureau on the north-west coast of France. In 1890 I was surprised to find at Geneva and Lausanne examples which had been obtained on Lake Léman in May; and I assumed that these were occasional migrants, deflected from a supposed line of migration up the Rhone valley from the Western Mediterranean, where, as already stated, the species was known to occur irregularly. No one has yet obtained the Roseate Tern on the coasts of the Iberian Peninsula, the north-west shores of Africa, or in the Canary Islands; but it occurs in Madeira, as well as in the Azores. Passing westward, we find it in the Bermudas; the West Indian Islands generally, from the vicinity of Venezuela upwards; and along the east side of America up to Massachusetts; not on the Pacific side, even where the continent is narrowest. Returning to the eastern hemisphere, the Roseate Tern has been taken at the Cape of Good Hope and in South-eastern Africa; breeds in the Mascarene Islands, Ceylon, and the Andamans; can be traced by Tenasserim, Malayasia, and the Moluccas to Australia, and even to New Caledonia—its most eastern breeding-place; while it ranges along the China Seas to the Loo-Choo Islands, wandering to Hitachi, Japan.

Now it will be seen that there are two very important gaps in its distribution: no authentic specimens being known from West-African waters between Madeira and the Cape of Good Hope, on the one side, or between the Mediterranean and the Indian Seas on the other. But when—as Mr. Whitaker has shown—a colony exists on the coast of Tunisia, it seems not improbable that the line of continuity should be sought eastward, along the coast of Africa, and southward down the Red Sea to the Indian Ocean. It is quite conceivable that the Roseate Tern may not *breed* on the islands of the Red Sea, because there, as well as at the Laccadive Islands and along the Malabar coast, we find—thrust in like a wedge—*S. albigena*, an allied species, which may prove inimical to *S. dougalli*, just as *S. fluviatilis* is, under certain conditions, further north. But it strikes me now that if a look-out is kept for the Roseate Tern along the Red Sea in April and

again in September, not omitting the Persian Gulf—for the bird may perhaps try the Euphrates Valley route,—we ought before long to learn more about the somewhat mysterious distribution of this species. Perhaps our northern birds may go no further south than the basin of the Mediterranean in winter. However, this penitential essay will serve to show how little one who has devoted his principal attention for five-and-twenty years to a group may know about some of its component species; while it may even stimulate some of the members of the B. O. U. who go down to the sea in ships, to lend their aid in taking away the reproach of our ignorance respecting the distribution of sea-birds.

While this paper was passing through the press, I received a letter from Mr. Whitaker, dated Feb. 29th, and containing the following interesting details:—

“Knowing the interest you take in Terns, I wrote the other day to Blanc, the naturalist in Tunis, asking if he could tell me anything further about *Sterna dougalli*, and he replied, confirming what he had previously told me of the species being common in summer in the south of Tunis, breeding plentifully on the islands there, and adds that he has never met with it anywhere in the interior of the Regency. He also gives me the following particulars regarding the breeding of the Roseate Tern, as noticed by him in South Tunis:—

“‘Like other Terns,’ he says, ‘*S. dougalli* generally nests, in company with others of its species, on small islands and not far from water; but, unlike most of the Tern family, instead of leaving its nest exposed, it endeavours to hide it as carefully as possible under any scrub-plants or long grass it may find available, sometimes making a tunnel-like passage or approach to the nest under the herbage. The nest itself is merely a depression in the ground, sometimes bare, at others thinly lined with grass-bents, in which (according to Blanc) but one egg is deposited. The eggs somewhat resemble those of the Common Tern, but are slightly smaller. In colour they are pale brown or yellowish-buff, with darkish brown spots, which vary very much in shape, size and distribution.’

"*Sterna dougalli*, Blanc goes on to say, is the least shy of all the Terns with which he is acquainted. He also says it has three different notes or series, viz., the call-note, the pleasure-note, and the alarm-cry. Having spent the last two or three summers on the south coast of Tunis, Blanc has no doubt had ample opportunity of observing *S. dougalli*, and ought therefore to be in a position to speak with accuracy about it.

"What I doubted was that only one egg should be laid in a nest; but on my writing again to ask him if he was quite sure of this, Blanc replied as follows:—

" 'Je vous certifie une fois de plus que je n'ai jamais trouvé qu'un seul œuf dans le nid de la *Sterna paradisea* [*dougalli*]; dans les nids des autres espèces de Sterne deux ou trois, jamais quatre œufs; dans le nid de *S. caspia* toujours deux, jamais trois.' "

XXII.—*On a new Species of Honey-eater* (*Ptilotis spilogaster*)
from South-eastern New Guinea. By W. R. OGILVIE
GRANT.

THE two specimens on which the present diagnosis is based have formed part of the British Museum collection for some years, but were wrongly identified with *Ptilotis filigera*, Gould [see Gadow, Cat. B. Brit. Mus. ix. p. 237 (1884)]. They are mentioned in the list of specimens under the letters "g" and "h," the former being from the Astrolabe Mountains, the latter from Port Moresby, both collected by Mr. A. Goldie.

Specimen "f" of the same list is *Ptilotis visi*, recently described by Mr. E. Hartert (Novit. Zool. iii. p. 15) from the Mailu District, S.E. New Guinea. This is another very distinct form, most nearly allied to the larger *P. chrysotis*, found in Western New Guinea and on some of the islands off that coast.

Among the large number of specimens examined, no example from New Guinea can be referred to *P. filigera*, Gould, which is confined to North-east Australia and the Aru Islands.

On account of the well-marked pale spots on the lower breast and belly, I have called the new species

PTILOTIS SPILOGASTER, sp. n.

Most nearly allied to *P. filigera*, Gould, but recognizable at a glance by the large and conspicuous postorbital patch of white feathers, which passes above and below the eye in two well-marked white bands. It also differs from *P. filigera* in having the nape entirely devoid of pale grey spots, while the lower breast and belly are very distinctly spotted with pale yellowish white. The general colour of the under part is pale brown, without much trace of any rufous on the flanks; the greater wing-coverts are dark brown, very narrowly edged with greenish yellow.

Adult: Astrolabe Mountains. Total length 7.5 inches, wing 4.15, tail 3.25, tarsus 1.06.

Adult: Port Moresby. Total length 7.4 inches, wing 4.1, tail 3.5, tarsus 1.02.

The specimen from Port Moresby is the type of the species.

The following key shows the differences between *P. spilogaster* and the most nearly allied species:—

- A. Patch of white feathers behind the eye very large and distinct, and extending above and below the eye to the lores; feathers of the nape entirely devoid of pale spots *P. spilogaster*.
- B. Patch of white feathers behind the eye and above the ear-coverts small but well-marked (absent in young birds); feathers of the nape distinctly spotted with whitish grey (less conspicuous or obsolete in immature birds) *P. filigera*.
- C. Patch of white feathers behind the eye and above the ear-coverts quite rudimentary or absent; pale spots on the nape less distinctly marked or absent.
 - a. Rufous margins to the inner webs of the primaries and secondaries very wide; greater wing-coverts pale rufous chestnut with brown middles, or brown widely margined with pale rufous. General colour of mantle, back, and wings brown, washed with rufous, forming a rather well-marked contrast with the crown of the head, which is dark brown with a more or less greenish tinge. Average size of wing 3.6 inches *P. visi*.

- b. Inner webs of primaries and secondaries narrowly margined with pale rufous; greater wing-coverts brown, with narrow yellowish-white or buff margins. General colour of the head brown, washed with greenish, similar to the rest of the upper parts. Average size of wing 3·9 inches .. *P. chrysotis*.

XXIII.—*Bulletin of the British Ornithologists' Club.*

Nos. XXXI.—XXXIII.

No. XXXI. (Dec. 30th, 1895.)

THE thirtieth meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 18th of December, 1895.

Chairman : P. L. SCLATER, F.R.S.

Members present :—G. BARRETT-HAMILTON, R. M. BARRINGTON, E. BIDWELL, Col. C. T. BINGHAM, J. L. BONHOTE, PHILIP CROWLEY, W. E. DE WINTON, W. GRAHAM, W. R. OGILVIE GRANT, ERNST HARTERT, Major A. P. LOYD, J. G. MILLAIS, R. NESHAM, H. J. PEARSON, FRANK PENROSE, HOWARD SAUNDERS (*Treasurer*), R. BOWDLER SHARPE (*Editor*), Capt. G. E. SHELLEY, Rev. H. H. SLATER, C. A. WRIGHT, JOHN YOUNG.

Visitors : F. V. McCONNELL, H. STEVENS, W. N. WOOD.

THE CHAIRMAN spoke of the loss which the Club had sustained since its last meeting, by the death of Mr. Henry Seebohm, of whose life and work he gave a short account. He proposed that a message of condolence be sent to the family, and this was unanimously agreed to. Mr. Slater also expressed a hope that some means would be found to publish the 'Monograph of the Turdidæ,' which Mr. Seebohm had left in a forward state.

Mr. J. G. MILLAIS exhibited photographs of Swallows' nests built in the branches of stags' horns at Warnham Court. One of these nests had been so built for nine years in succession.

Mr. ERNST HARTERT exhibited skins of *Podargus ocellatus*, Quoy & Gaim., and the type of a new *Podargus*, of which the Tring Museum had received a number of specimens, and which he characterized as follows :—

PODARGUS INTERMEDIUS, sp. n.

Similis *P. ocellato*, sed multo major ; alis 243–211 millim., caud. 200–206.

Hab. ‘ Kiriwina,’ in insulis ‘ Trobriand ’ (typus) et ‘ Fergusson ’ in ins. ‘ D’Entrecasteaux ’ dietis.

“ *Obs.*—This species is remarkably larger than *P. ocellatus* and *P. ocellatus marmoratus*, and all the specimens are alike, so that it must be described. The wing in *P. ocellatus* is usually under, and seldom over 180 millim. long, so that there is generally a difference of at least 20–25 millim., or about an inch. The same striking differences in size are obvious in all the other parts, such as beak, feet, &c., as may be seen at a glance in the specimens exhibited. *P. intermedius* is intermediate in size between *P. ocellatus* and its sub-species and the gigantic *P. papuensis*, Quoy & Gaim., which has a wing of about 300 millim. or one foot, while it agrees in colour with both of the species, varying just as much, the females now before me being more rufous.”

“ This interesting new form was discovered by Mr. Albert S. Meek, who also found its nest and eggs, which will be described elsewhere.”

Mr. HARTERT likewise exhibited a new Goatsucker, which he characterized as follows :—

CAPRIMULGUS ROSENBERGI, sp. n.

♀. Similis *C. ocellato*, sed duabus maculis rotundis albis in tectricibus longissimis alarum primo visu distinguendus : macula collari alba maxima : rectricibus omnibus albo terminatis, abdomine sine maculis albis conspicuis. Long. al. 5·2 poll., caud. 4·7, tarsi 0·6. “ Iris brunnea.”

Hab. Ad flumen ‘ Dagua ’ dictum, in Colombia occidentali, W. Rosenberg coll. April 2, 1895.

Type in the Rothschild Museum.

Dr. BOWDLER SHARPE gave the following systematic list of the species of the family *Ardeidæ*, as determined by him

during his recent studies of these birds for the twenty-sixth volume of the 'Catalogue of Birds in the British Museum':—

1. *Phoyx purpurea* (L.).
2. — *manillensis* (Meyen).
3. *Ardea goliath*, Cretzschm.
4. — *sumatrana*, Raffl.
5. — *insignis*, Hodgs.
6. — *humbloti*, Milne-Edw. & Oust.
7. — *melanocephala*, Vig. & Childr.
8. — *cocoi*, L.
9. — *cinerea*, L.
10. — *herodias*, L.
11. — *occidentalis*, Aud.
12. *Mesophoyx intermedia* (Wagl.).
13. — *brachyrhyncha* (Brehm).
14. — *plumifera* (Gould).
15. *Herodias alba* (L.).
16. — *egretta* (Wils.).
17. — *timoriensis* (Less.).
18. *Florida cærulea* (L.).
19. *Melanophoyx ardesiaca* (Wagl.).
20. — *vinaceigula*, Sharpe.
21. *Dichromanassa rufa* (Bodd.).
22. *Notophoyx novæ-hollandiæ* (Lath.).
23. — *pacifica* (Lath.).
24. — *picata* (Gould).
25. — *aruensis* (Gray).
26. *Lepterosdias gularis* (Bosc).
27. — *asha* (Sykes).
28. *Garzetta garzetta* (L.).
29. — *nigripes* (Temm.).
30. *Leucophoyx candidissima* (Gm.).
31. *Hydranassa tricolor* (P. L. S. Müll.).
32. — *ruficollis* (Gosse).
33. *Nyctanassa violacea* (L.).
34. — *pauper* (Scl. & Salv.).
35. *Agamia agami* (Gm.).
36. *Demiegretta sacra* (Gm.).

37. *Nycticorax nycticorax* (L.).
38. — *tayaza-guira* (V.).
39. — *cynocephalus* (Mol.).
40. — *leuconotus* (Wagl.).
41. — *caledonicus* (Gm.).
 α. crassirostris, Vig.
42. — *mandibularis*, Ogilvie Grant.
43. — *manillensis*, Vig.
44. — *minahasæ*, Meyer & Wiglesw.
45. *Canchroma cochlearia*, L.
46. — *zeledoni*, Ridgw.
47. *Gorsachius melanolophus* (Raffl.).
48. — *goisagi* (Temm.).
49. *Syrigma cyanocephalum* (Mol.).
50. *Pilerodius pileatus* (Bodd.).
51. *Butorides atricapilla* (Afzel.).
52. — *striata* (L.).
53. — *javanica* (Horsf.).
 α. amurensis (Schrenk).
 β. spodiogaster, Sharpe.
54. — *stagnatilis* (Gould).
55. — *sundevalli*, Sharpe.
56. — *virescens* (L.).
57. *Tigriornis leucolopha* (Jard.).
58. *Zonerodius heliosylus* (Less.).
59. *Tigriosoma lineatum* (Bodd.).
60. — *excellens*, Ridgw.
61. — *marmoratum* (V.).
62. — *bahiæ*, Sharpe.
63. — *fasciatum*, Such.
64. — *salmoni*, Sel. & Salv.
65. *Heterocnus cabanisi* (Heine).
66. *Erythrocnus rufiventris* (Sund.).
67. *Ardeola ralloides* (Scop.).
68. — *idæ* (Hartl.).
69. — *grayi* (Sykes).
70. — *bacchus* (Bp.).
71. — *speciosa* (Horsf.).

72. *Bubulcus lucidus* (Rafin.).
73. — *coromandus* (Bodd.).
74. *Ardetta minuta* (L.).
75. — *podicipes* (Bp.).
76. — *sinensis* (Gm.).
77. — *exilis* (Gm.).
78. — *neoxena*, Cory.
79. — *erythromelas* (V.).
80. — *pusilla* (V.).
81. — *riedeli*, Meyer & Wiglesw.
82. — *involucris* (V.).
83. — *cinnamomea* (Gm.).
84. *Zebrilus pumilus* (Bodd.).
85. *Nannocnus eurythmus* (Swinh.).
86. *Ardeirallus sturmi* (Wagl.).
87. *Dupetor flavicollis* (Lath.).
88. — *gouldi* (Bp.).
89. — *nesophilus* (Sharpe).
90. — *melas* (Salvad.).
91. *Erythrophoyx woodfordi* (Grant).
92. — *prætermissa* (Sharpe).
93. *Botaurus stellaris* (Linn.).
94. — *capensis* (Schl.).
95. — *pæciloptilus* (Wagl.).
96. — *lentiginosus* (Mont.).
97. — *pinnatus* (Wagl.).

The following new genera and species were described :—

MELANOPHOYX VINACEIGULA, sp. n.

Similis *M. ardesiacæ*, sed gutture vinaceo nec nigro distinguenda. Long. tot. 16·5 poll., culm. 2·25, alæ 9·0, caudæ 3·36, tarsi 3·05.

Hab. Transvaal. *Typus* in Mus. Brit.

NOTOPHOYX, gen. n.

Genus simile generi '*Leptorodius*' dicto, sed plumis nuchalibus dependentibus nullis distinguendum.

Typus est *Notophoyx novæ hollandiæ*.

†TIGRIORNIS, gen. n.

Genus simile generi '*Tigriosoma*' dicto, sed tarso anteriore reticulato distinguendum.

Typus est *Tigriornis leucolopha* (Jard.).

†HETEROCNUS, gen. n.

Genus simile generi '*Tigriosoma*' dicto, sed gutture medialiter plumoso distinguendum.

Typus est *Heterocnus cabanisi* (Heine).

†TIGRIOSOMA BAHLÆ, sp. n.

Similis *T. lineato* (Bodd.), sed pectore et abdomine brunneis atque fulvo latè fasciatis distinguendum. Long. tot. 24·0 poll., culm. 4·2, alæ 10·8, caudæ 4·2, tarsi 4·0.

Hab. Bahia, Brazil.

Dr. SHARPE exhibited, on behalf of Dr. J. E. T. Aitchison, F.R.S., a pair of Himalayan Woodpeckers (*Dendrocopus himalayensis*), shot by him in his garden at Murree, N.W. Himalayas, in September. The birds were killed in the act of making holes in walnuts for the purpose of extracting the kernel for food. Dr. Aitchison wrote that two walnut-trees in his garden were infested by these Woodpeckers, which destroyed a large number of walnuts, picking them off the ground when they fell, and inserting them in crevices and holes in the bark of trees, until they had managed to hammer a hole through the shells.

Dr. SHARPE also described a new species of Weaver-bird from Eastern Africa, collected by Dr. Donaldson Smith. He gave the following diagnosis of the species :—

PLOCEIPASSER DONALDSONI, sp. n.

P. brunneus, frontis et verticis plumis brunneis, albo squamatum marginatis: uropygio et supracaudalibus albis: rectricibus albo terminatis: subtus isabellinus, facie laterali gulæque albis, fasciâ mystacali posticâ nigrâ: pectore summo vix fusco striolato distinguendus. Long. tot. 6·7 poll., culm. 0·7, alæ 3·8, caudæ 2·3, tarsi 0·9.

Dr. SHARPE also exhibited a specimen of the Red-throated Pipit (*Anthus cervinus*), which had been submitted to him

for identification by Mr. W. C. J. Ruskin-Butterfield, of St. Leonard's. The specimen had been shot near Hastings on the 13th of November, and was a male in full winter plumage.

Mr. W. R. OGILVIE GRANT exhibited specimens of two apparently undescribed birds from the Owen Stanley Mountains, in S.E. New Guinea :—

OREOPSITTACUS GRANDIS, sp. n.

♂ similis *O. arfaki* ♂, sed multo major, et plagâ abdominali rubrâ absente distinguendus. Long. tot. 6·3 poll., culm. 0·7, alæ 3·5, caudæ 3·3, tarsi 0·65.

♀ similis *O. arfaki* ♀, sed multò major et abdomine viridi concolore distinguenda.

MELIPOTES ATRICEPS, sp. n.

Similis *M. gymnopi*, sed subtus minimè albo notata, et subalaribus pallidè cervinis distinguenda. Long. tot. 8·0 poll., culm. 1·92, alæ 4·3, caudæ 3·9, tarsi 1·2.

Captain G. E. SHELLEY gave some details of his projected new 'Handbook to the Birds of Africa,' of which the first volume was nearly ready for issue.

No. XXXII. (Jan. 31st, 1896.)

THE thirty-first meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 15th of January, 1896.

Chairman : P. L. SCLATER, F.R.S.

Members present :—G. BARRETT-HAMILTON, E. BIDWELL, Lt.-Col. C. T. BINGHAM, F. E. BLAAUW, F. E. BEDDARD, F.R.S., PHILIP CROWLEY, A. H. EVANS, W. GRAHAM, W. R. OGILVIE GRANT, Dr. A. GÜNTHER, F.R.S., G. H. CATON HAIGH, R. NESHAM, CHAS. E. PEARSON, H. J. PEARSON, F. PENROSE, HOWARD SAUNDERS (*Treasurer*), W. L. SCLATER, Dr. R. BOWDLER SHARPE (*Editor*), Capt. G. E. SHELLEY, F. STYAN, W. B. TEGETMEIER.

Visitors : Dr. F. D. DRUITT, J. MITCHELL, ARNOLD PIKE.

MR. SCLATER gave the outlines of a scheme for a new general work on Birds, which he had long planned and which he proposed to bring before the next meeting of the B. O. U. with the hope of inducing his brother ornithologists to assist in it. Now that the great 'Catalogue of Birds' in the British Museum was approaching completion, it was manifest that the possibility of preparing a general handbook of the described species of birds (something in the style of Bonaparte's 'Conspectus') was greatly increased. In Mr. Sclater's opinion the best way of effecting this desirable object would be to separate the handbook into six portions, corresponding to the six great Geographical Regions of the earth's surface. Taking the described species of birds as about 12,000, each volume appropriated to a Region would relate, on an average, to 2000 species. After adding to each volume 500 species for those that occurred in more than one Region, there would thus be (on the average) about 2500 species to be treated of in each volume.

Mr. Sclater proposed that, besides a reference to the British Museum Catalogue, only a short Latin diagnosis, a few selected synonyms, and the *patria* should be added to the name of each species; and he considered that, if this plan were adopted, five or more species could (on the average) be easily got into one page: at which rate each volume would consist of about 500 pages. He thought that an appropriate title for such a work would be 'Avium Viventium Expositio Systematica'; the short title being 'Aves,' formed by the initial letters of these four words. The six volumes might be numbered I. to VI., but would have a second title according to the Region to which they related—Aves Palæarcticæ, Aves Æthiopicæ, &c. The compilation of each volume should be assigned to an ornithological expert qualified to undertake the particular task.

A DISCUSSION followed on Dr. Sclater's proposed scheme, of which Dr. Günther expressed approval. Dr. Bowdler Sharpe stated that he would like to consider the question further before it was proposed to the B. O. U. in April, and stated

that he had promised to contribute to the volumes of the 'Thierreich,' which Dr. Schultze was proposing to publish in Berlin. The Chairman pointed out that the scope of his proposed work was entirely different from that of the 'Thierreich.'

Mr. F. E. BLAAUW exhibited an egg of *Psophia leucoptera* which had been laid in his aviaries at s'Graveland during the past summer. This was believed to be the first opportunity afforded to ornithologists of knowing what the egg of *Psophia* was like, and it was interesting to find that the Trumpeter laid a pure white egg.

Dr. DRUITT exhibited a specimen of the Senegal Stone-Curlew (*Ædicnemus senegalensis*) which he had shot near Assonan, in Upper Egypt.

Mr. G. H. CATON HAIGH exhibited a specimen of the Water-Pipit (*Anthus spipoletta*) killed in Lincolnshire during the past autumn.

Mr. W. B. TEGETMEIER exhibited some of the down of the King Penguin (*Aptenodytes pennanti*), from specimens now living in the Zoological Society's Gardens.

No. XXXIII. (Feb. 29th, 1896.)

THE thirty-second meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 19th of February, 1896.

Chairman: P. L. SCLATER, F.R.S.

Members present:—O. V. APLIN, G. BARRETT-HAMILTON, E. BIDWELL, W. E. DE WINTON, E. A. S. ELLIOT, H. J. ELWES, W. GRAHAM, W. R. OGILVIE GRANT, E. HARTERT, Lt.-Col. L. H. IRBY, A. H. MACPHERSON, J. G. MILLAIS, E. NEALE, R. NESHAM, C. E. PEARSON, FRANK PENROSE,

Major R. G. WARDLAW-RAMSAY, HOWARD SAUNDERS (*Treasurer*), Capt. G. E. SHELLEY, W. B. TEGETMEIER, A. TREVOR-BATTYE, H. M. WALLIS, J. YOUNG.

Visitors : E. GARNET MAN, COLCHESTER WEMYSS.

Mr. E. A. S. ELLIOT exhibited some interesting skins of North-American birds; amongst others, specimens of the various southern and northern forms of *Bubo virginianus*; *Megascops flammeola* from Colorado, said to belong to the first clutch of eggs sent to the Smithsonian Institution; *Sphyrapicus thyroideus* (both sexes), two examples of *Falco richardsoni*; and a *Xema sabinii* in breeding-plumage, remarkable as having been obtained in Colorado.

Mr. H. M. WALLIS exhibited three eggs laid by a Golden Eagle (*Aquila chrysaetus*), which had been about thirty years in confinement, and began to lay eggs about fifteen years ago. The eggs having been taken and those of a Domestic Fowl substituted, the Eagle hatched three of the latter and reared three fine birds, feeding them principally on the flesh of rats. One of these fowls, a cockerel, was slain by his foster-mother, but the others had thriven. A photograph was exhibited, showing the Eagle and the fowls.

A letter addressed to Dr. Bowdler Sharpe by Count SALVADORI was read, in which he called attention to the differences of plumage exhibited by a series of *Diphyllodes* recently received by him from S.E. New Guinea. He proposed to divide them as follows:—

- | | |
|--|-----------------------------------|
| I. Capite fusco-griseo, minimè rufescente. | |
| a. Alis ochraceis | 1. <i>D. magnifica</i> . |
| b. Alis lætè flavis | 2. <i>D. seleucides</i> . |
| c. Alis aurantiacis | 3. <i>D. chrysoptera</i> . |
| II. Capite rufescenti-brunneo. | |
| d. Alis lætè flavis | 4. <i>D. xanthoptera</i> , sp. n. |
| e. Alis lætè aurantiacis | 5. <i>D. hunsteini</i> . |

Mr. HOWARD SAUNDERS made some remarks on his arrangement of the Order *Gaviæ* in vol. xxv. of the 'British Museum Catalogue.' He divided the Order into two Families:—LARIDÆ, containing Terns, Skimmers, and Gulls; STERCO-

RARIIDÆ, for the Skuas. Besides the well-known cere to the bill, the latter possessed some important distinctive features, which had been overlooked by most naturalists except Dr. E. Coues—*e. g.* the sternum had only *one* notch on each side of the posterior margin; the cæca were much larger than in the Laridæ; and the fully webbed toes were furnished with strong, sharp, hooked claws.

In his treatment of the subfamily Sterninæ Mr. Saunders had felt obliged to admit a few more genera than he did in his revision in the P. Z. S. for 1876. To *Hydrochelidon* (the Marsh Terns) succeeded *Phaëthus* (the heavy-billed River Tern of tropical America), *Gelochelidon* (the Gull-billed Tern), *Hydroprogne* (the Caspian Tern), *Seena* (the Indian River Tern), *Sterna* (for 33 species, commencing with *S. melanogaster*, including the Sooty Terns, and ending with *S. trudeaui*), *Nænia* (for the Inca Tern), *Procelsterna* (for the two small Grey Noddies), *Anous* (for the large Noddies), *Micranous* (for the small Slender-billed Noddies), and *Gygis* (for the 2 aberrant White Terns)—11 genera, 51 species. The American Black Tern (*Hydrochelidon surinamensis*) was admitted to specific rank; *Sterna saundersi*, Hume, was the proper name for the species provisionally called *S. sumatrana* in 1876; *Sterna lorata* was the name for the small Tern from the south-west of America, previously known as *S. exilis* of Tschudi, the type of *S. exilis* in the Neuchâtel Museum having proved to be *H. surinamensis*.

In the subfamily Rhynchopinæ—with only one genus, *Rhynchops*—five species were admitted. Three of these were found in America, one in Africa, and one in India. That the species found in Africa was far closer to the south-east American species than it is to the Indian would excite no surprise.

The subfamily Larinæ contained 7 genera:—*Xema*, for 2 species of Fork-tailed Gulls; *Rhodostethia*, for 1 species of Wedge-tailed Gull; *Larus* (44 species); *Gabianus*, for the large Australian Gull, *G. pacificus*, with a very deep bill; *Leucophaeus*, for *L. scoresbii*; *Pagophila*, for the Ivory Gull; and *Rissa*, for the two species of Kittiwake.

In the family STERCORARIIDÆ, the large Skuas were placed in the genus *Megalestris* (*M. catarrhactes*, &c.), while the three species with elongated central tail-feathers were retained under the genus *Stercorarius*.

Mr. SCLATER exhibited some bird-skins from a collection sent to him for examination by Mr. J. J. Quelch, of the Museum, Georgetown, British Guiana, and called special attention to a fine adult male specimen of *Caprimulgus maculicaudus* (Lawr.) (Hartert, Cat. B. xvi. p. 575), and to an example of *Nyctiprogne leucopygia* (Spix), being the first specimens he had met with of these species from British Guiana. The two specimens of *C. maculicaudus* in the British Museum were both females, Mr. Hartert having described the male from an example in Graf v. Berlepsch's collection.

Mr. SCLATER called attention to the completion and publication of the first volume of Capt. Shelley's work on African birds. The present volume contained a systematic list of the birds of the Ethiopian Region, 2534 in number, with their localities and references to the 'British Museum Catalogue' and to other descriptions and figures.

Dr. BOWDLER SHARPE communicated a description of a new Lark from the collection made by Dr. Donaldson Smith during his recent expedition to Lake Rudolph :—

MIRAFRA COLLARIS, sp. n.

M. rectricibus externis extus fulvo marginatis: notæo saturatè cinnamomeo, dorsi plumis albo latè marginatis: supracaudalibus et rectricibus mediis cinereis, nigro medialiter striolatis: subtus fulvescens: hypochondriis cinnamomeis: remigibus subtus nigris, vix ad basin rufis, pogonio interno minimè isabellino: gulâ isabellinâ: fasciâ nigrâ gutturali insigni, et præpectore cinnamomeo maculato distinguenda. Long. tot. 6·0 poll., culm. 0·5, alæ 3·5, caudæ 3·2, tarsi 0·95.

Mr. O. SALVIN, F.R.S., communicated the following description of a new species of Humming-bird from Northern Peru, which he called

† *AGLÆACTIS ALICIÆ*, sp. nov.

Supra fusco-nigra, dorso postico nitide amethystino; tectricibus supracaudalibus nitide viridescentibus, duabus longissimis amethystinis: alis et cauda saturate cupreis, harum remigis externi pogonio externo et rhachide albis, hujus triente basali alba, rhachidibus in dimidio basali albis: loris, mento, pectore medio, plumis elongatis pectoralibus et tectricibus subcaudalibus albis; gutture medio, pectoris lateralibus et hypochondriis nigricantibus, plumis omnibus stricte pallide limbatis; abdomine medio albicante, subalaribus albis: rostro nigro, mandibulæ basi flavicante; pedibus nigris. Long. tota circa 4·8 poll., alæ 3·4, caudæ rectr. med. 1·5, rectr. lat. 1·8, rostri a rictu 0·9.

♀ mari similis, coloribus omnibus minus nitidis.

Hab. Suecha, N. Peru, alt. 10,000 feet (*O. T. Baron*).

Obs. In March of last year Mr. Baron was fortunate enough to meet with this beautiful new *Aglæactis* at a place called Suecha, in the Andes of Northern Peru, at an elevation of 10,000 feet above sea-level. He obtained several specimens of both sexes, some of which he sent to Mr. Godman and others to Mr. Rothschild.

The most nearly allied species is *A. castelnaudi*, from which *A. alicie* may readily be distinguished by the following characters:—the brilliant amethystine feathers of the lower back and upper tail-coverts instead of being uniform in colour are interrupted across the base of the tail by a bar of green feathers, they are, moreover, of a redder tint; the tail is dark coppery, and the base of the shafts white; there is a very distinct white patch on the throat and chin, and the outer web of the outermost primary and the under tail-coverts are also white. The white pectoral tuft is composed of short small feathers.

Mr. W. B. TEGETMEIER exhibited an egg of a Domestic Fowl, of an abnormally warm brown colour with darker spots.

XXIV.—Notices of recent Ornithological Publications.

[Continued from p. 154.]

33. *Barrows and Schwarz on the American Crow.*

[The Common Crow of the United States. By Walter B. Barrows and E. A. Schwarz. U. S. Dept. Agricult. Ornith. & Mamm. Bulletin, No. 6, p. 9.]

Here we have the results of an extended and elaborate investigation into the food of the Common Crow of the U. S. (*Corvus americanus*), carried out, under the superintendence of Dr. Merriam, by Messrs. Barrows and Schwarz. It is based on an examination of nearly a thousand stomachs. After summing up the benefits and losses, the verdict is that the "good exceeds the bad, and that this Crow is rather a friend than an enemy to the farmer."

34. *Baur on the Galápagos.*

[The Differentiation of Species on the Galápagos Islands and the Origin of the Group. By G. Baur. Biological Lecture delivered at the Marine Biological Laboratory of Wood's Hole, Summer Session of 1894. Reprint. 8vo. Boston, U.S.A. 1895.]

Mr. Baur's lecture on the Galápagos and the curious phenomena exhibited in the differentiation of species in the various islands is well worthy of perusal. His conclusion is that only the "subsidence theory" is sufficient to account for the present state of the fauna.

"At a former period these islands were connected with each other, forming a single large island, which itself, at a still earlier time, was united with the continent, probably with Central America and the West Indies. When this large island was not yet broken up into a series of smaller islands, the number of species must have been very much smaller; probably there was only one species of *Nesomimus*, of *Certhidea*, of *Tropidurus*, of the Land-Tortoise, and so on. Through isolation into single islands the peculiar differentiation of the species began; an originally single species was differentiated in many different forms; every, or nearly every, island developed its peculiar races."

35. *Blackburn (Mrs. H.) on Bird-life.*

[Birds from Moidart and elsewhere. Drawn from nature by Mrs. Hugh Blackburn. Royal 8vo. Edinburgh: David Douglas, 1895.]

“Alas, how time escapes!” It seems but yesterday, and yet nearly 34 years have passed since the appearance of the first notice in ‘The Ibis’ of Mrs. Blackburn’s ‘Birds drawn from Nature,’ while the concluding portion of that volume was reviewed just 28 years since. In the interval Mrs. Blackburn’s hand has not lost its cunning, as shown by some of her later drawings—for instance, the Goshawk on its prey (p. 18)—while the letterpress is excellent of its kind. Where the artist excels is, however, in depicting *movement* in birds, and this is evident even in those cases in which the outline is slightly blurred. We particularly admire the frontispiece, with a group of sea-birds fishing tumultuously off the island of Eigg, the Wren feeding her brood (p. 102), and the Cormorants, Golden Plover, and Seals on the basaltic islet of Haskeir, near Canna. It is hardly necessary to eulogize the powers of observation shown by the author of one of the best descriptions extant of the behaviour of the nestling Cuckoo; but here is a little suggestion for the attention of those interested in Crows:—“In the young Grey-backed Crow the eyes are blue. I do not know if it is so in the Black Carrion Crow.” Nor do we at this moment, though we incline to think that the irides in the latter are dark; but well-informed people will doubtless be able to tell us.

36. *Büttikofer on Turdinulus and the allied Genera.*

[A Revision of the Genus *Turdinus* and Genera allied to it, with an Enumeration of the Specimens contained in the Leyden Museum. By J. Büttikofer. Notes Leyden Mus. xvii. p. 65.]

Mr. Büttikofer gives us a revision of *Turdinulus* and the allied genera of the family, based upon the specimens in the Leyden Museum. He commences with a key of the 21 genera—*Turdinus*, *Ptilocichla*, *Ptilopyga*, *Lanioturdinus**, *Turdinulus*, *Rimator*, *Malacocincla*, *Anuropsis*, *Crateroscelis*, *Amaurocichla*, *Trichostoma*, *Drymocataphus*, *Scotocichla*,

Ortygocichla, *Elaphrornis*, *Muelleria**, *Pellorneum*, *Erythrocichla*, *Illadopsis**, *Ophrydornis**, and *Malacopteron*. Of these generic terms the four marked with an asterisk (*) are now proposed for the first time. A complete revision of the species follows.

37. *Chapman (F. M.) on the Birds of Trinidad.*

[Further Notes on Trinidad Birds, with a Description of a new Species of *Synallaxis*. By Frank M. Chapman. Bull. Amer. Mus. Nat. Hist. vii. p. 321.]

On his second visit to Trinidad, in March and April, 1894, Mr. Chapman devoted his attention "largely" to mammals, but made some additions to our knowledge of the birds. Notes are given on 12 species not observed in 1893, amongst which is a *Synallaxis*, allied to *S. terrestris* of Tobago, described as *S. carri*. Some additional notes on species observed in 1893 are given.

38. '*Check-list of North-American Birds.*'

[Check-list of North-American Birds, prepared by a Committee of the American Ornithologists' Union. Second and revised Edition. New York, 1895.]

Since the issue of the original '*Check-list of North-American Birds*' in 1885, seven supplements to it have been published, the last of these having been issued in 1894. The numerous additions and changes in nomenclature made in these supplements are incorporated in the "second and revised edition" now before us, besides which the "habitats" attached to every species and subspecies have been brought up to date.

The numbers attached to the species in the first edition of the '*Check-list*' have not been altered, so that in the present edition, as in the last, they remain 768. But 38 new names are introduced in their proper places, so that the whole number of species in the '*Check-list*' is now 806. Besides these there are 268 subspecies recognized.

In the present edition, as in the former, the usual order

of arrangement is reversed; the Passeres are placed at the end of the list and the Pygopodes at the beginning. We are unable to see any advantage in this alteration, which is contrary to the usual practice of ornithologists, though often employed in general systematic works on zoology, in cases when it is desirable to consider the lower and more simple organisms first. It is, of course, just as correct to commence one way as the other; but "priority," so much worshipped nowadays, is decidedly in favour of beginning "at the top."

One point there is in the American code of nomenclature which, if insisted on, will always keep it apart from the rest of the world, *i. e.* the maintenance of the grammatical—and, may be, accidental—errors made by the original proposers of names. We cannot understand how any educated person can agree to sacrifice grammar to the demon of priority. We are glad to observe that the new German rules of nomenclature take quite the opposite view on this subject.

39. *Dresser's Supplement to the 'Birds of Europe.'*

[A History of the Birds of Europe, including all the Species inhabiting the Western Palearctic Region.—Supplement. By H. E. Dresser, F.L.S., F.Z.S., &c. Part III. May 1895; Part IV. August 1895; Part V. October 1895. 4to. London, 1895.]

Since our last notice of this handsome work ('Ibis,' 1895, p. 392) four more parts have appeared, with illustrations by Mr. Keulemans of the following species:—

- Part III. *Phylloscopus viridanus*, *P. nitidus*; *Acredula macedonica*, *A. caucasica*; *Parus atriceps*, *P. bokharensis*, *P. cypriotes*, *P. pleskei*, *P. palmensis*, *P. teneriffæ*, *P. ombriosus*; *Sitta whiteheadi*; *Motacilla personata*; *Anthus similis*.
- Part IV. *Motacilla xanthophrys*; *Lanius grimmi*, *L. funereus*, *L. leucopterus*, *L. radii*; *Carduelis caniceps*; *Coccothraustes carneipes*; *Passer ammodendri*; *Montifringilla nivalis*, *M. alpicola*; *Fringilla palmæ*.
- Part V. *Erythrospiza obsoleta*; *Bucanetes mongolicus*; *Pyrhula cassini*; *Uragus sibiricus*; *Loxia rubrifasciata*; *Emberiza luteola*, *E. huttoni*, *E. saharæ*, *E. cioides*; *Alauda gulgula*.

The letterpress of the first and second species figured appeared in Part II. To the three forms of *Acredula caudata*

recognized in Europe by some systematists, two more are now added, and as Mr. Dresser appears to require a partner in subdividing the Paridæ (teste *Parus britannicus*), he has found one this time in Count Salvadori, who instigated the differentiation of *Acredula macedonica*. The Indian species figured under the name of *Parus atriceps*, Horsf., is described under the earlier name of *P. cinereus*, Vieillot. The researches of Mr. Meade-Waldo in the Canary Islands have shown that three unsuspected forms of Blue Tit exist in that group, and these are duly described, with illustrations; but *Troglodytes pallidus*, of Transcaspia, is not figured, because it is "merely a pale desert form" of *T. parvulus*, though admitted to specific distinction. For the Desert Finch named *Erythrospiza obsoleta* on the plate, the genus *Bucanetes* has been accepted in the letterpress. An able review is given of the Starlings of the Western Palæarctic region, and, after treating of the forms allied to *Sturnus vulgaris*, Mr. Dresser decides that *S. unicolor* may be placed on one side as quite distinct from any other species. The plates are up to their former standard of excellence, but the figures of some of the Shrikes seem to be rather too large.

40. *Drummond-Hay on the Birds of the Tay.*

[Bird-life within the Banks of the Tay, from Kenmore to Invergowrie. By Col. H. M. Drummond-Hay, C.M.Z.S. Trans. Perthshire Soc. Nat. Sci. ii. pp. 62-77.]

It is with deep regret that we allude to this interesting paper as being the last we shall receive from its author, whose much-lamented decease will be found recorded further on. The paper is short, but full of valuable matter, and the descriptive portion is charming, for Col. Drummond-Hay belonged to the good old school of those who wrote English, and not "Journalese."

41. *D'Urban and Mathew on the Birds of Devon.*

[Supplement to the Birds of Devon. By W. S. M. D'Urban, F.L.S., and the Rev. Murray A. Mathew, M.A., F.L.S. Pp. 31. 8vo. London, 1895.]

Since the publication of 'The Birds of Devon,' which we

noticed in 'The Ibis,' 1893, p. 131, sufficient additional information has been obtained to render a supplement necessary. Several species have been added to the list of breeders, among these the Short-eared Owl, the nest of which was found near Branton, probably the most southern record for England. Several rare visitors have also occurred, such as the Ruddy Sheld-Duck; while a specimen of the American Yellow-billed Cuckoo was picked up dead last October no further off than Bridport, Dorset, and *ought* to have dropped in Devon.

42. *Elliot on North-American Shore-Birds.*

[North American Shore-Birds: a History of the Snipes, Sandpipers, Plovers, and their Allies inhabiting the Beaches and Marshes of the Atlantic and Pacific Coasts, the Prairies and the Shores of the inland Lakes and Rivers of the North-American Continent; their Popular and Scientific Names, together with a full Description of their Mode of Life, Nesting, Migration, and Dispersions, with Descriptions of the Summer and Winter Plumages of Adults and Young, so that each Species may be readily identified; a Reference Book for the Naturalist, Sportsman, and Lover of Birds. By Daniel Giraud Elliot, F.R.S.E, &c. With seventy-four Plates. 8vo. London, 1895.]

The second and somewhat lengthy title saves us the trouble of explaining the scope of the work. The illustrations are good of their kind, while the letterpress is suitable for the majority of the class of readers for whom it is designed. We are sorry to see a reproduction of the erroneous—and we hoped exploded—story of the discovery of the eggs of the Curlew-Sandpiper in Greenland; in fact the whole article on this subject is full of blunders, and there are other errors which might have been avoided. The name of the distinguished naturalist to the 'Alert' appears throughout as Fielding; Capt. Lyon, of the 'Hecla,' is always Lyons, and so on.

43. *Hartert on new Birds.*

[Description of a New Humming-bird. By Ernst Hartert. *Novitates Zool.* ii. p. 484.

Description of a new Flycatcher from the Solomon Islands. By Ernst Hartert. *Ibid.* p. 485.]

Mr. Hartert describes *Heliangelus claudia*, a new Hum-

ming-bird from Colombia, and *Pomarea ribbei*, from Munia, Shortland Islands, Solomon group.

44. *Hartert on Birds from Mindoro.*

[On a small Collection of Birds from Mindoro. By Ernst Hartert. *Novitates Zool.* ii. p. 486.]

After some prefatory remarks on what is known of the Ornis of Mindoro, Mr. Hartert gives a list of the birds (38 species) obtained during his visit to North Mindoro in 1894 by Mr. Everett and sent to the Tring Museum. Critical remarks are added. No new species are described.

45. *Kirby on African Wild Game.*

[In *Haunts of Wild Game: a Hunter-Naturalist's Wanderings from Kahlamba to Libombo.* By Frederick Vaughan Kirby, F.Z.S. Blackwoods, 1896.]

Those who appreciate hunting-adventures and stories of big-game shooting will find Mr. Kirby's narrative full of interest. It relates moreover to a country as yet but little known—the north-eastern district of the Transvaal adjoining the strip of Portuguese territory which borders the coast. This land and its inhabitants, both man and beast, are fully described in the present volume. An Appendix is devoted mainly to field-notes on the mammal-fauna of this district, but the principal birds likely to be noticed by sportsmen are also mentioned. Of these the Great Kori Bustard (*Otis kori*) “deservedly stands first.” This magnificent bird is stated to attain a height of $4\frac{1}{2}$ feet and a weight of 40 pounds.

46. *Leverkühn upon Bird-protection in England.*

[*Vogelschutz in England.* Von Paul Leverkühn. Sonderabdruck aus den ‘*Ornith. Monatsb. des Deutsch. Ver. zum Schutze d. Vogelw.*,’ 1894, Nos. 1–11. 8vo. Halle a. S., 1895.]

Dr. Leverkühn has prepared for the “German Union for the Protection of Birds” an elaborate account of the various measures taken by Acts of Parliament and in other ways

in England for the guarding of bird-life from wanton destruction in this country.

47. *Lilford's 'Coloured Figures of British Birds.'*

[Coloured Figures of the Birds of the British Islands. Issued by Lord Lilford, F.Z.S. &c., President of the British Ornithologists' Union. Part XXX., February 1895; XXXI., June 1895. Royal 8vo. London.]

Since we last noticed the progress of our President's beautiful work ('Ibis,' 1895, p. 282) two more parts (xxx. and xxxi.) have been issued. They contain life-like coloured illustrations of the following species:—

<i>Linota hornemanni.</i>	<i>Columba livia.</i>
<i>Nyctala tengmalmi.</i>	<i>Ægialitis cantiana.</i>
<i>Falco gyrfalco.</i>	— <i>curonica.</i>
<i>Clangula albeola.</i>	<i>Phalaropus fulicarius.</i>
<i>Cosmonetta histronica.</i>	<i>Scolopax gallinula.</i>
<i>Aquila nævia.</i>	— <i>gallinago.</i>
<i>Pandion haliaëtus.</i>	<i>Fulica atra.</i>
<i>Somateria stelleri.</i>	<i>Œdicnemus scolopax.</i>
— <i>spectabilis.</i>	<i>Tringa temmincki.</i>
<i>Edemia perspicillata.</i>	<i>Totanus hypoleucus.</i>
<i>Mergus cucullatus.</i>	<i>Larus melanocephalus.</i>
<i>Harelda glacialis.</i>	<i>Lestris richardsoni.</i>

48. *Lilford's 'Birds of Northamptonshire.'*

[Notes on the Birds of Northamptonshire and Neighbourhood. By Lord Lilford. Illustrated by Messrs. A. Thorburn and G. E. Lodge. 2 vols. London: Porter, 1895.]

Here are two splendidly illustrated volumes from the pen of our President, which will be read with great interest by all members of the B. O. U. and by other students of our native ornithology. They contain a series of notes on 227 species of birds which have been recorded as occurring in the county of Northampton or in its immediate neighbourhood. The bulk of them have been already published at irregular intervals in the 'Journal of the Northamptonshire Natural History Society' between 1880 and 1893. They are now republished in a uniform shape, with corrections and additions, and will be found to be "excellent reading," as not only are the

local occurrences of every species described, but general remarks, based upon Lord Lilford's great experience, not only in other parts of England, but also in the south of Europe, are freely introduced. The numerous photogravure plates are taken from drawings prepared by Mr. A. Thorburn, and the wood-engravings are from the pencil of Mr. G. E. Lodge. All these, we need hardly say, are of a very high degree of merit, for it is not to be supposed that the President of our Union would accept anything but first-class work for the illustrations of his favourite subject. We heartily congratulate Lord Lilford on having brought his many years' labours on the birds of his native county to a successful conclusion.

49. *Lumsden and Brown on the Fauna of Loch Lomond.*

[A Guide to the Natural History of Loch Lomond and Neighbourhood. Mammals and Birds: by James Lumsden, F.Z.S. Reptiles and Fishes: by Alfred Brown. 8vo. Glasgow: D. Bryce & Son., 1895.]

This is a handy volume, suitable for those persons who visit Loch Lomond in summer or autumn. An outline of the portion relating to the birds appeared some years ago in the 'Proceedings of the Natural History Society of Glasgow,' but it has now been entirely re-written and much new matter introduced. It seems excellent. There are two illustrations of hybrids between the Pheasant and the Capercaillie.

50. *Martorelli's Notes from Italy.*

[Notizie Ornitologiche sopra Osservazioni fatte nell' Anno 1894-95 dal Prof. Giacinto Martorelli. Atti Soc. Ital. Sci. Nat. xxxv.]

In the first of these small articles an account is given of a hybrid Macaw produced in captivity at Trenno, between *Ara macao*, ♂, and *A. militaris*, ♀. From the second paper we learn that the severe cold, and especially the heavy snows which fell in the winter of 1894-95, drove a very unusual number of Golden Eagles to the lower districts of Lombardy, where several were examined in the flesh by Prof. Martorelli. In the third paper a form of *Lanius excubitor* taken in Italy—and almost melanotic—is discussed.

51. *Meyer and Wigglesworth on Birds from the Talaut Islands.*

[Eine zweite Sammlung von Vögeln von den Talaut Inseln. Von A. B. Meyer und L. W. Wigglesworth. Abhandl. u. Ber. k. zool. u. anthrop. Mus. Dresden, 1894-95, No. 9.]

We have now a second paper on the birds of the Talaut Islands (*cf.* 'Ibis,' 1895, p. 136) from the same authors. It contains an account of 36 species, of which four are new to science (*Tanygnathus talautensis*, *Edolisoma talautense*, *Dicaeum talautense*, and *Zosterops bubelo*) and ten were not represented in the former collection. The avifauna of the Talaut Islands is now known to comprehend 58 species, of which a complete list is given.

52. *Millais on the South-African Veldt.*

[A Breath from the Veldt. By John Guille Millais, F.Z.S. With Illustrations by the Author and a Frontispiece by Sir J. E. Millais, R.A. London: Sotheman, 1895.]

This is one of the most attractive books we have met with for a long time. Besides the crowds of illustrations, which are fully worthy of the author's well-known name, the narrative is of an entertaining and instructive character, and gives us a good account of Mr. Millais's adventures in the veldt of South Africa.

Mr. Millais went first to Beaufort West to see the springbucks, then took a long waggon-trek from Johannesburg over the Limpopo into the haunts of the white rhinoceros, and finally proceeded into the Orange Free State to shoot the wildbeeste. South Africa is the land of the larger mammals, and our author's principal dealings are with antelopes, zebras, buffaloes, and beasts of prey. But birds are by no means neglected. Excellent notes and illustrations are given of Bustards, Vultures, Jabirus, Touracoes, and other characteristic forms of African bird-life. Most interesting are the accounts of our author's experiences with the Ox-peckers and Honey-guides. The latter we must extract for the benefit of our readers:—

"As the bird's name implies, it is excessively fond of honey, but as he cannot extract it from the holes in trees where he knows it to be, he calls man to his assistance to dig it out for him. Mentally marking every nest of bees in a certain locality, he hangs around till he meets with a friendly biped, to whom he makes known his presence and his desire by a pleasant chuckling note. This he keeps up incessantly as long as the man is in view. Then, after a short undulating flight of about 600 yards, he generally alights on a dead bough, so as to make himself as conspicuous as possible, and loudly continues his chuckling. If not attended to, he returns again and again with increasing audacity, as I have previously described; but if followed he waits till the man comes within 50 yards, and then continues his flights, which vary from 100 to 200 yards, till the nearest nest is discovered. A dead bough is pretty sure to be about, or the bees would not be there; and on this he settles with his eyes towards the bees'-nest. Or, if this hint is not sufficient, he will go and perch himself in the mouth of the hole, so that the greatest blockhead in the country cannot fail to find it. Piet Landsberg, who was fond of honey, and liked running after these birds, found no less than four bees'-nests in a short time—all shown to him by one bird. The nest is generally plastered up with mud and not very difficult to extract; and while you are engaged in this operation the Honey-guide sits quietly on the tree, trusting to your honour to give him a share of the plunder, which, I need hardly say, is always done by the natives."

We may also call attention to Mr. Millais's account of the birds met with on the Mzingwani River (p. 97), where he describes the fish-eating habits of *Haliaëtus vocifer*, the Pied Kingfisher, the Roller, and other feathered inhabitants of the district.

53. Muirhead's '*Birds of Berwickshire*.'

[The Birds of Berwickshire, with Remarks on their Local Distribution, Migration, and Habits, and also on the Folk-lore, Proverbs, Popular

Rhymes, and Sayings connected with them. By George Muirhead, F.R.S.E., F.Z.S., &c. Vol. II. 8vo. Edinburgh: D. Douglas, 1895.]

This is the concluding portion of a work of remarkable beauty, the first volume of which we noticed in 'The Ibis,' 1890, p. 117. As before, there is a daintily-etched vignette to almost every species mentioned; while many quaint sayings and scraps of old ballads show the important part played by birds in the daily life of the lowland peasant, and antiquarian lore abounds. Not that the life-history of birds is made of secondary importance, for the calendars and tables of dates of migration are all admirable; while, for graphic description, the reader may turn to the Bittern and the sketch of the condition of Bille Mire, near Chirnside, where the "boom" had not ceased until the present century was somewhat advanced.

54. *Norfolk and Norwich Naturalists' Society's 'Transactions.'*

[Transactions of the Norfolk and Norwich Naturalists' Society. Vol. VI. Pt. 1. Norwich, 1895.]

The principal paper on ornithology in this part is by Mr. J. H. Gurney, who gives an interesting account of the great arrival of Little Auks (*Mergulus alle*) on the coast of Norfolk and vicinity during the severe cold of January 1895. No fewer than 285 examples were actually received by taxidermists, most of them picked up dead or dying from starvation and cold, for very few indeed were shot. In Yorkshire the preponderance of females was remarked, and in Norfolk all the earlier birds (with one exception) were of that sex, while the later ones were nearly all males. Mr. Gurney also contributes some remarks on the rarer species of Raptores added to the magnificent collection in the Castle Museum, as set forth in Mr. Southwell's Report. Lastly, Mr. Gurney has communicated some extracts from a lecture given by William Lean in Birmingham in 1856. The latter described a Kite's nest robbed near Neath, the four eggs in which were covered up with black-and-red plaided Welsh flannel; and also made remarks, far in advance of the time, respecting the

evidence that in many cases the Cuckoo must necessarily place her egg in the nest of the fosterers by means of her bill. Mr. F. Danby Palmer's account of old-time Yarmouth naturalists is worthy of perusal. The Rev. Julian G. Tuck gives an account of a bird said to be *Uria bruennichi* obtained near Wisbech, Cambridgeshire, in January 1895, and supposed at first to be a young Razorbill; and an illustration of an undoubted Brünnich's Guillemot is given, *but* it is from an Arctic specimen, and is not a portrait of the bird in question. The claim of this species to a place in the British list has been fully established only since December 1894, though there was previously a strong probability that the bird occasionally visited the British coast, because an example had been obtained as far south as Havre.

55. North's Notes on Australian Ornithology.

[Note on a Semi-albino Specimen of *Dacelo gigas*. By Alfred J. North, F.L.S. Records Austral. Mus. ii. No. 6.

Note on a Nest of *Petræca leggii*, Sharpe. *Id. op. cit.*]

The first note is explained by the title. The second is on the Scarlet-breasted "Robin" of Australia (*Petræca leggii*), which builds its well-formed nest on a horizontal branch or in a cavity of a tree. Such a nest Mr. North now describes and figures, from a specimen forwarded to the Australian Museum, Sydney, by Mr. Gabriel, from Bayswater, Victoria.

56. Noska and Tschusi zu Schmidhoffen on the Caucasian Black Grouse.

[Das kaukasische Birkhuhn (*Tetrao molokosiewiczzi*, Tacz.). Eine monographische Studie von Max Noska, weiland Jagdleiter Sr. kaiserl. Hoheit des Grossfürsten Sergei Michailowitsch, unter Mitwirkung von Victor Ritter von Tschusi zu Schmidhoffen. Separatabdruck aus 'Ornith. Jahrb.' vi. 1895.]

This is a complete monograph on the Black Grouse of the Caucasus, *Tetrao molokosiewiczzi*, prepared by the well-known ornithologist Victor Ritter von Tschusi zu Schmidhoffen from the specimens and field-notes of Herr Max Noska. It

is accompanied by a plate containing coloured figures of the male, female, young male, and chick.

57. Poynting's 'Eggs of British Birds.'

[Eggs of British Birds.—Limicolæ (Plovers, Snipes, Sandpipers, &c.). By Frank Poynting. Parts I.—III. 4to. London: R. H. Porter, 1895.]

It would be difficult to speak too highly of the beauty and accuracy of the coloured illustrations in this work. We have compared them carefully with the figures in the edition of Hewitson which is generally known as the second, in which, as Hewitson told the writer of this notice, he put forth the whole of his powers of delineation, and we think that Mr. Poynting's best work quite comes up to that of the great pioneer in oology. And then again, where Hewitson was often only too glad to have a single specimen to figure, his successor has been able to pick and choose from a large series, and can sometimes give a plate with as many as a dozen characteristic examples. It goes without saying that the eggs of many species now figured were unobtainable in former days. The letterpress is excellent and very well selected, consisting chiefly of quotations from authorities who have written from personal observation. The eggs figured belong to the following species:—

- Part I. *Eudromias morinellus*; *Charadrius plumialis*, *C. dominicus*; *Hematopus ostralegus*; *Recurvirostra avocetta*; *Himantopus candidus*; *Scolopax rusticola*; *Tringa maculata*, *T. striata*, *T. rufescens*; *Bartramia longicauda*; *Totanus ochropus*, *T. fuscus*.
- Part II. *Cursorius gallicus*; *Charadrius fulvus*; *Vanellus vulgaris*; *Streptilas interpres*; *Gallinago caelestis*; *Macrorhamphus griseus*; *Limicola platyrhyncha*; *Tringa alpina*; *Calidris arenaria*; *Totanus macularius*, *T. calidris*; *Limosa belgica*; *Numenius phaeopus*.
- Part III. *Ægialitis hiaticula*, *Æ. curonica*, *Æ. cantiana*, *Æ. vocifera*; *Phalaropus fulicarius*, *P. hypoboreus*; *Gallinago gallinula*; *Tringa fuscicollis*, *T. minutilla*; *Machetes pugnax*; *Numenius arquata*, *N. borealis*.

58. *Read on the Colours of Birds.*

[The Nature, Distribution, and Uses of the Colours of Birds. By R. H. Read, M.B.O.U. N. Staffordshire Naturalists' Field Club, Nov. 20th, 1894.]

We have received a separate copy of this excellent little paper, read before the North Staffordshire Field Club. Mr. Read has evidently given considerable attention to a subject which was neither too severe, nor yet too trivial, for the audience he addressed. To speak of Keeler's "work" is somewhat misleading, for, though good in matter, it is merely a paper on 'The Evolution in the Colour of the Land-Birds of North America,' published at San Francisco in 1893.

59. *Rothschild on new Species of Birds.*

[A new Species and Genus of Rollers. By the Hon. Walter Rothschild. *Novitates Zool.* ii. p. 479.

A new Species of Bower-bird. *Id. ibid.* p. 480.

A new Species of Rail. *Id. ibid.* p. 481.

A new Species of Tanager. *Id. ibid.* p. 481.

On a new Parrot. *Id. ibid.* p. 492.]

In the fourth number of vol. ii. of 'Novitates Zoologicae,' Mr. Rothschild describes the following novelties:—(1) *Uratelornis chimæra*, a very remarkable new form from Madagascar allied to *Atelornis*; (2) *Amblyornis flavifrons*, a new Bower-bird from Dutch New Guinea; (3) *Hypotenidia owstoni*, a new Rail from Guam, Marianne Is.; (4) *Ramphocelus dunstalli*, a new Tanager from Central America; and (5) *Palæornis intermedia*, a new Parrot, supposed to be from Bombay! We are a little disinclined to believe that a new Parrot has been discovered in British India, and venture to suggest that further investigations should be made on this subject.

60. *Salvadori on the Chenomorphæ, Crypturi, and Ratitæ.*

[Catalogue of the *Chenomorphæ*, *Crypturi*, and *Ratitæ* in the Collection of the British Museum. By T. Salvadori. London, 1895.]

The 27th volume of the great Catalogue of Birds, being

ready, is issued before the 24th, 25th, and 26th. It is devoted mainly to the great group of Anseres, with its allies the Palamedeæ and Phœnicopteri, but contains also the Tinami and Ratitæ. We all know the character of Count Salvadori's work, which, on this, as it has been on all previous occasions, is of the most painstaking and finished description. If, therefore, we venture to criticize some of the results he has arrived at, it must not be supposed that we undervalue this most meritorious and most useful volume as a whole.

In the first place systematists, as we all know, may be "lumpers" or "splitters." "Splitting" is in these days very much in fashion, and we think that our author has yielded rather too freely to that tendency, both in the matter of generic and specific divisions, especially as regards the species of Tinamous, to the number of which he has added no fewer than 14.

In the second place, the changes of nomenclature Count Salvadori proposes to introduce, especially as regards some of our most familiar species, are absolutely alarming, and we do not think he will induce his brother ornithologists to follow him in these radical innovations—at any rate we *hope* not. Who will know the Bean Goose in *Anser fabalis*, or the White-eyed Duck as *Nyroca africana*? Such names are only useful to conceal their owners, as language has been said to be intended to disguise our thoughts! No doubt Latham, in an absent mood, latinized the name of Bean Goose in his 'List of the Birds of Great Britain' into *Anas fabalis* a year before Gmelin gave it the name of *Anas segetum*. But the term "*fabalis*" has been clean forgotten ever since. Even Latham himself never used it again, and in his 'Index Ornithologicus' called the Bean Goose "*Anas segetum*," and did not even allude to "*Anas fabalis*." Nor has any other author ever thought of it during the past 108 years. Under these circumstances the specific term *fabalis* may be deservedly neglected, as withdrawn by the author himself and obsolete.

In the same way "*africana*" has never been used as the

specific name of the White-eyed Duck. Gmelin's *Anas africana* may or may not refer to that species, but his *Anas ferruginea* is of exactly the same date, and has been in usage for the last hundred years. Why, then, should we be called upon to make such an unnecessary change, and to throw aside a good name to adopt a bad one?

The species of *Chenomorphæ* treated of in the present volume and recognized as valid are 203, which are represented by 5044 specimens in the National Collection, only eight species being left without representatives. Of *Tinamous* 65 species are acknowledged, represented by 363 specimens, and of *Ratitæ* 26 species, represented by 134 specimens. Seven *Tinamous* and four *Ratitæ* only are deficient in the national series.

The following four generic terms are proposed as new in this volume:—*Asarcornis* (type *Anas scutulata*); *Pteronetta* (type *Querquedula hartlaubi*); *Nesochen* (type *Anser sandvicensis*); and *Elasmonetta* (type *Anas chlorotis*).

The following species are described as new, or have new names assigned to them:—

Erismatura æquatorialis.

Merganetta frænata.

Merganser comatus.

Tinamus fuscipennis.

—— *latifrons*.

—— *castaneiceps*.

Nothocercus intercedens.

Crypturus griseiventris.

—— *simplex*.

Crypturus salvini.

—— *dissimilis*.

—— *columbianus*.

—— *mexicanus*.

—— *occidentalis*.

Nothoprocta coquimbica.

Nothura nigroguttata.

—— *boliviana*.

Coloured figures are given of the following species:—*Dendrocygna guttulata*; *Nettion albigularis*, *N. gibberifrons*; *Dafila eutoni*; *Nyroca innotata*; *Merganetta frænata*, *M. armata*; *Tinamus castaneiceps*, *T. solitarius*; *Nothocercus nigricapillus*; *Crypturus castaneus*, *C. erythropus*, *C. bartletti*, *C. scolopax*, *C. balstoni*; *Rhynchotis maculicollis*; *Nothoprocta coquimbica*, *N. pentlandi*, *N. ornata*; *Nothura marmorata*, *N. darwinii*.

61. *Salvadori on Birds from Argentina and Paraguay.*

[Viaggio del dott. Alfredo Borelli nella Repubblica Argentina e nel Paraguay. Uccelli raccolti nel Paraguay, nel Matto Grosso, nel Tucuman e nella Provincia di Salto. Par Tommaso Salvadori. Boll. Mus. Zool. e Anat. comp. R. Univ. Torino, x. No. 208, 1895.]

Dr. A. Borelli, during a journey in Southern Brazil, Paraguay, and the northern provinces of Argentina, made a considerable collection of birds, which Count Salvadori refers to 190 species. Of 145 species of which specimens were obtained in Paraguay, 20 are not mentioned in Graf. v. Berlepsch's list of the birds of that country, and two are new—*Hypotrionchis ophryophanes* and *Pyrhura borellii*. Two species from Tucuman are also characterized as new—*Spermophila plumbeiceps* and *Columba tucumana*.

62. *Salvadori on the Bearded Vulture.*

[Notizie intorno al *Gypaëtus barbatus*. Par Tommaso Salvadori. Boll. Mus. Zool. e Anat. comp. R. Univ. Torino, x. No. 207, 1895.]

Particulars are given of some recent captures and observations of this magnificent bird in the Maritime Alps, especially near the Col de Tenda, a district in which its presence has not often been recorded. As Count Salvadori too truly observes, the Bearded Vulture is becoming rarer and rarer in the Alps. To accelerate its extermination a majority (!) at the International Congress held in Paris last June placed *Gypaëtus* on the black list, among the birds "nuisibles à l'agriculture," and even put "les Vautours" under the same ban; not because the true Vultures did any harm, but lest, peradventure, a "Lämmergeier" should escape. The next generation of Swiss ornithologists will probably be able to point proudly to the specimens in their museums and say, "Quite extinct now."

63. *Saunders on the Gaviæ, and Salvin on the Tubinares.*

[Catalogue of the Birds in the British Museum. Vol. XXV. Catalogue of the *Gaviæ* and *Tubinares* in the Collection of the British Museum.—*Gaviæ* (Terns, Gulls, and Skuas), by Howard Saunders. *Tubinares*

(Petrels and Albatrosses), by Osbert Salvin. 475 pp. 8 coloured plates. 8vo. London, 1896.]

Here we have a volume from two of the leading authorities on their respective subjects, and the result is eminently satisfactory. No ornithologist will question the competence of Saunders to catalogue the Gulls or of Mr. Salvin to arrange the Petrels. Dr. Günther, we must allow, could not have put these two important groups into better hands.

The series of Gaviæ in the British Museum consists of 4649 specimens, among which are representatives of every one of the 115 recognized species. Saunders's private collection of this group, got together during the many years in which he has paid special attention to it, has contributed materially to the perfectness of the series. Saunders divides the Gaviæ primarily into two families—Laridæ and Stercorariidæ; and ranges the former under three subfamilies—Sterninæ, Rhynchopinæ, and Larinæ. We are pleased to see no new generic names introduced into the ranks of the Gaviæ, except *Micranous* (for the smaller Noddies), which, however, had been previously instituted in the 'Bulletin' of the B. O. C. The specific terms are also in nearly every case familiar to us.

Mr. Salvin has been for many years our standing referee on Albatrosses and Petrels, and we cannot but rejoice at having his great experience brought to bear upon the Tubinares in a systematic form. He recognizes 107 species of the Order, of which 15 only are not represented in the British Museum among its 1086 specimens. Four families, according to the arrangement here adopted, constitute the Order—Procellariidæ, Puffinidæ, Pelecanoididæ, and Diomediidæ. No new genera are created, and the nomenclature is such as will be familiar to most students of the Order: except that *Pelecanoides exsul* (of the S. Indian Ocean) is separated from *P. urinatrix*, *Diomedea chionopectera* is a new Albatross of the group of *D. exulans*, and *Thalassogeron layardi* is a new species from the Cape seas. We observe that there are three specimens of the newly-discovered *Diomedea regia* in the National Collection. Here,

again, the addition of the Salvin-Godman Collection has materially increased the excellence of the series.

Coloured figures are given of the following species:—*Megalestris maccormicki*; *Oceanodroma monorhis*, *O. hornbyi*; *Puffinus persicus*; *Majaqueus parkinsoni*; *Æstelata cervicalis*, *Æ. axillaris*, and *Diomedea irrorata*.—P. I. S.

64. *Schalow on Birds from Western Greenland.*

[Ueber eine Vogelsammlung aus Westgrönland. Von Herman Schalow. J. f. O. 1895, p. 457.]

Herr Schalow gives us an account of the birds obtained by Dr. v. Drygalski's expedition to West Greenland in 1892–93, to which Dr. Vanhöffen was attached as naturalist. Examples of 17 species and a number of eggs were obtained. The skins were deposited in the Berlin Museum, and the eggs in the collection of Major Krüger-Velthusen. The author gives us notes on 29 species in the present memoir. Among these is *Tadorna casarca*, which appears, without doubt, to have occurred in 1892 in the district of Upernivik. This is still further north than Iceland, where the Ruddy Sheld-Duck was noticed in 1892 (*cf.* Pearson, *Ibis*, 1895, p. 247).

65. *Sharpe on rare British Birds.*

[A Chapter on Birds. By R. Bowdler Sharpe, LL.D., F.L.S., &c. Rare British Visitors, with Eighteen Coloured Plates. Society for Promoting Christian Knowledge. 8vo. London, 1895.]

This is a pleasantly-written popular work, with illustrations, by Mr. Keulemans, of the Bee-eater, Roller, Red-footed "Kestrel," Rose-coloured Starling, Golden Oriole, Holböll's Redpoll, Scarlet Rose-Finch, Two-barred Crossbill, Shore-Lark, Blue-headed Wagtail, White-headed Long-tailed Tit, Waxwing, "Common Tree-Warbler (*Hypolais hypolais*)," Aquatic Warbler, Rock-Thrush, Arctic Blue-throat, Black-bellied Dipper, and Red-breasted Flycatcher.

66. *Suschkina on a new Shrike.*

[*Lanius elæagni*, n. sp. Von P. Suschkin. Bull. Soc. Impér. Nat. Moscou, 1895, No. 1.]

Lanius elæagni is a new Shrike belonging to the *Otomela*

group, of which examples were obtained by the describer in May, 1894, in the neighbourhood of Kok-Dschida, near the outflow of the Temir into the Emba. It is elaborately described by M. Suschkin in the present paper, and will be figured in Menzbier's 'Ornithology of Turkestan.'

67. *Thompson's 'Glossary of Greek Birds.'*

[A Glossary of Greek Birds. By D'Arcy Wentworth Thompson. 8vo. Oxford, 1895.]

All students of bird-lore will be grateful to Prof. D'Arcy Thompson for the pains he has taken in the compilation of this useful volume, and to the Delegates of the Clarendon Press for having printed and published it. It is a dictionary of Greek birds, containing all the birds' names used in that ancient tongue arranged alphabetically, with a learned disquisition on each of them. The authors by whom the names are employed, the epithets applied to them, their etymology, their various meanings, and all other recorded particulars are fully given and descanted upon. To some of these Greek names, of course, there is no sort of difficulty in stating the modern scientific equivalent; the ἑρπύς is *Upupa epops*, and the πελαργός is *Ciconia alba*. But in other cases the exact species referred to is by no means clear, and there are ample grounds for more than one interpretation. It will be seen at once, also, how many terms there are of which the meaning is rightly pronounced to be "uncertain" or "indefinite." Not a few of these, however, have been applied by modern systematists to species to which they cannot possibly have been intended to refer by the ancient authors. 'Greek Birds' will be welcomed by ornithologists as dealing with a branch of their subject which has been but slightly treated of in recent times.

68. *Townsend on Birds from Cocos and Malpelo Islands.*

[Birds from Cocos and Malpelo Islands, with Notes on Petrels obtained at Sea. By C. H. Townsend. Bull. Mus. Comp. Zoöl. Harvard Coll. xxvii. p. 121.]

Cocos Island lies off the Bay of Panama, midway between

Costa Rica and the Galápagos. It was visited by H.M.S. 'Sulphur' in 1840, when a single example of a peculiar Cuckoo (*Coccyzus ferrugineus*) was obtained. The island is volcanic, rising to 1700 feet in elevation, and covered with the densest forest. The naturalists of the U.S. Fish-Commission S.S. 'Albatross,' in 1891, procured examples of six species of birds on it, which are here described. *Cocornis agassizi* is a new genus and species allied to *Cactornis* of the Galápagos; and *Nesotriccus ridgwayi* is a new form of Tyrannidæ, allied to *Eribates magnirostris* of the same islands. *Dendræca aureola* is not distinguishable from examples of the same species from the Galápagos. Two specimens of *Coccyzus ferrugineus* were procured.

On Malpelo Island, an inaccessible volcanic islet in lat. 3° 59' 7" N. and long. 81° 34' 27" W., four specimens of the rare Gull *Creagrus furcatus* [*Xema furcata*] were shot during the short stay of the expedition on March 3rd, and others were seen on the rocks.

Examples of five species of Petrels were obtained at sea, among which were specimens of the rare *Halocyptena microsoma*.

XXV.—Letters, Extracts, Notices, &c.

WE have received the following letters, addressed "to the Editors":—

SIRS,—I think it only right to mention that a perfectly clear understanding existed between those few ornithologists who advocated and those who undertook the English translation of Herr Gätke's volume; the understanding being that it was, as far as possible, "to be Gätke and nothing but Gätke."

I am,

Yours &c.,

J. A. HARVIE-BROWN.

Dunipace, Larbert, Stirlingshire, N.B.,
Jan. 12th, 1896.

SIRS,—It may be worth while to record the occurrence of a second species of Thicknee (*Ædicnemus senegalensis*) in Egypt, which has not been noticed by Capt. Shelley. On the 11th of February, 1891, on one of the islands of the First Cataract at Assouan, I shot, as it rose from some rocks close to me, a bird which was easily distinguishable from *Æ. scolopax*,—a common bird throughout Egypt—by its prevailing tint of grey, instead of brown, and by its lighter shade. The irides, of which I made a sketch at the time, were bluish black, becoming yellow only at the inner margin; the bill, thicker than that of *Æ. scolopax*, was black, except at the base on each side of the middle line, where it was lemon-yellow; the lower mandible black to the extreme base, where it was faintly yellow; legs pale bluish grey. The skin was kindly named for me on my return to England.

I feel that I ought to apologize for shooting this specimen, though I believe it adds a new species to the Egyptian list, in which it is not included by Capt. Shelley. My excuse is that, in spite of much temptation, this was the only ornithological toll which I took on that day.

Few visitors to Egypt know the beauty of these many islands of the First Cataract. Their freshness and their flowers and birds form a most pleasant contrast to the well-trodden sandy bank of the Nile.

I am,

Yours &c.,

2 Manchester Square, London, W.

F. D. DRUITT, M.D.

Jan. 31st, 1896.

SIRS,—Count Salvadori's very interesting note on *Anas erythrophthalmus*, Wied, in the last number of 'The Ibis' (p. 99), makes the position of the species quite clear, and it only remains to determine whether *Nyroca brunnea* of South Africa and *N. nationi* of Western South America can be distinguished from it and from one another. The examination of fresh specimens can alone settle this point. But my object in writing to you is to show that Count Salvadori has not quite accurately described my first introduction to *Anas*

erythrophthalmus in the Wied Collection in New York. He says that I examined the *two* type-specimens in New York, but on referring to my note (*Ibis*, 1874, p. 319) it will be seen that I speak of having found the female only. Had I seen the male, the difference between it and *Metopiana peposaca* would have been as apparent to me as it subsequently was to Mr. Allen.

I take this opportunity to refer to another small point in the last number of 'The Ibis.' On page 156 you make me responsible for the name *Bulweria bulweri*. This particular combination of generic and specific names is more than half a century old; it was made by Bonaparte in 1842, and has been endorsed by all recent American writers and by Seebohm. If you reject the specific name *bulweri* on account of its similarity to the generic name *Bulweria*, you will have to accept Heincken's name *anginho* as the specific title of Bulwer's Petrel. I never use such combinations as *Pica pica* and the like, but *Bulweria bulweri* does not offend my ears. In reference to the date of plate 65 of Jardine and Selby's 'Illustrations of Ornithology,' where Bulwer's Petrel is first described, I may add that Mr. Sherborn gives it (*Ibis*, 1894, p. 326) as not later than Nov. 1828.

I am,

Yours &c.,

OSBERT SALVIN.

10 Chandos Street, Cavendish Square,
Feb. 14th, 1896.

SIRs,—From the editorial note entitled 'Rare Birds at Madras,' in the last number of 'The Ibis,' pp. 155, 156, it might be inferred that *Phalaropus hyperboreus* has never been obtained in India since the appearance of Jerdon's 'Birds,' vol. iii. (1864), wherein occurs the paragraph quoted to the effect that "a single instance is on record of the occurrence of this bird in India."

The Red-necked Phalarope is, however, by no means particularly rare on the Indian coast, as Mr. Hume has shown. The bird is frequently referred to in the pages

of 'Stray Feathers,' and an extract from vol. vii., p. 150 (1878), will afford trustworthy information as to the distribution of the species.

Mr. Hume writes:—"Except at times of passage, they [examples of *P. hyperboreus*] are never met with inland in India. I have now received numerous specimens from Karachi, the Gulf of Oman, and the Persian Gulf, and they occur also off the west coast of the Peninsula, though sparingly, all the way to Ceylon, and up the east coast to Madras, where my friend Dr. Ludovic Stewart obtained the first specimen, and where I have since found that, at times during the cold season, they are almost common in the bazaar."

To this I may add that off the Makrau (or Baluchistan) coast, and probably wherever they occur in the Indian Ocean, these birds are usually found in the daytime in flocks, resting on the sea, frequently several miles from land, and I have seen what was probably the same species under similar conditions near Aden.

The other "rare bird," the Oyster-catcher, though doubtless rare at Madras, where the sandy shore, without a rock for hundreds of miles, is not suited to the bird's habits, is by no means uncommon on parts of the Indian coast.

W. T. BLANFORD.

Feb. 25th, 1896.

SIRS,—In the January number of 'The Ibis' (p. 151), you have remarked upon the late appearance of the 'Record of Ornithological Literature' for 1890. I beg leave to observe that the blame for this delay does not rest with me, but wholly and solely with the editor of the 'Archiv.' It happens in this way: that it is the yearly volume for 1891 of the 'Archiv für Naturgeschichte,' in which the Ornithological Record for 1890, as well as that of the literature of other classes of animals for the same year, is published. My Records for the years 1891 and 1892 are complete, and have been already a long time in MS., and those of the literature of the years 1894 and 1895 have been actually published

in the 'Ornithologische Monatsberichte.' The delay in the publication of the Record in the 'Archiv für Naturgeschichte' was one of the inducements that led me to undertake the publication of the 'Ornithologische Monatsberichte.' This Monatsbericht contains a review of the whole ornithological literature of the year, arranged in order, and thus supplies the earliest possible account of the publications of every year.

I am,

Yours &c.,

Berlin.

A. REICHENOW.

The Sun-birds of Ruwenzori.—In Mr. Scott Elliot's 'Naturalist in Mid-Africa,' two Sun-birds are mentioned as met with high up on Mount Ruwenzori—*Nectarinia kilimensis* and *N. johnstoni*. In the small collection of birds (of some 30 skins) presented by Mr. Scott Elliot to the British Museum are two examples of *Nectarinia kilimensis*, which was originally described in 1884 by Captain Shelley from specimens obtained by Sir H. H. Johnston on Kilimanjaro. Other examples in the National Collection were procured by Mr. H. C. V. Hunter on Kilimanjaro. There are no specimens of *N. johnstoni* in Mr. Scott Elliot's collection, but the species is quite likely to occur on Ruwenzori, as it was found by Dr. Gregory on Mount Kenia (Sharpe, Bull. B. O. C. iii. p. ix), although originally discovered on Kilimanjaro.

Turnix sylvatica in Sicily.—Mr. J. I. S. Whitaker, of Palermo, has sent us the following interesting, but saddening, communication:—

"I regret to say that the Hemipode, once so plentiful in Sicily, must now be looked upon as a *rara avis* here, and I only hope I may be mistaken in thinking that it will, at no distant date, be totally extinct in this island.

"Professor Doderlein, writing of *Turnix sylvatica* in 1871 ('Avifauna del Modenese e della Sicilia,' p. 168), reported the species as plentiful in Sicily at that time, he

himself having often killed as many as ten to fifteen of these birds in a day in the southern and south-western districts of the island.

"I myself remember this bird fairly plentiful in the above districts so recently as the year 1880, its favourite haunts being the so-called 'sciarre,' or tracts of uncultivated moorland, which extend for many miles along the south coast of Sicily, running parallel with it, but lying a little way inland. Here, among the clumps of dwarf broom-palm and other scrub vegetation, one might have been sure of meeting with *Turnix sylvatica*, and, with a good dog and decent luck, of making a fair bag. A friend of mine, one day when riding over the moorland near Mazzara, rescued one of these birds from the clutches of a Hawk that had just seized it. In those days one might often have seen the Hemipode in a cage hung on the wall of a peasant's cottage. During the last 15 years or so, however, the species has gradually, but steadily been decreasing in numbers, and I have not seen a single specimen in the flesh since the year 1891, when two or three were sent me from Campobello, near Mazzara. Indeed, for the past two years I have been endeavouring to procure another specimen, without success, nor can I hear of any having been obtained during this period anywhere in the island. This leads me to fear that the Hemipode, following in the steps of the Francolin, will, unfortunately, ere long be a thing of the past in Sicily. The reason for this is probably to be looked for in the fact of the greatly diminished area of country adapted to the requirements of this species, much of the former waste land in Sicily having been reclaimed of late years. The want of efficient protective game-laws may perhaps also be partly to blame, although not, I think, to any great extent, for the 'Quaglia tridattile,' or 'Quaglia triugni,' as it is called here, has never been held in great esteem by the Sicilians, either as a bird for the table or as affording much sport, and has consequently escaped persecution on the part of the native gunner and fowler."

The Seebohm Collection.—The Seebohm collection of birds,

now transferred to the British Museum, is found to consist of about 16,950 specimens, including 235 skeletons. It is one of the most important that the Museum has ever received, being particularly rich in species of the Palæarctic region, which were not so well represented in the Museum as those of most other parts of the world. It comprises a series of almost every species of the Phasianidæ known to science, including many rare and costly specimens; while as regards the Thrushes, on a monograph of which Seebohm was engaged at the time of his death, the collection is probably the finest in the world. Of the Wading-birds (Plovers and Snipes) Seebohm had already presented many hundreds of specimens, but the 1440 skins which remained in his possession at his death formed the pick of his collection and the material upon which he founded his work on the Geographical Distribution of the Charadriidæ. Besides the many types contained in the collection, and the large series from localities whence the Museum had not hitherto had the opportunity of obtaining specimens, there are also many historical collections, such as Swinhoe's from China, Pryer's from Japan, Anderson's from India, a nearly perfect set of the birds of Mount Kina-balû, Borneo, and the valuable series obtained by Seebohm himself in the valleys of the Petrhora and the Yenesci. The collection of skeletons is also one of great importance, as the Museum collection was previously quite insufficient for the scientific study of these objects.

From an article contributed to 'Nature' (Feb. 20th, 1896) on this subject by Dr. Bowdler Sharpe, we extract the following particulars:—

"A few years ago Mr. Seebohm presented to the Museum his collection of eggs, and, with this as a basis for the work, the entire series of oological specimens in the Museum was set in order and arranged under his own supervision by my daughter, Emily Mary Sharpe, till it was found that, with the Hume and Salvin-Godman collections, the British Museum could boast of a series of 48,000 eggs of birds.

"In the same generous spirit, he freely gave the type-specimens of any birds he possessed, that the value of the

'Catalogue of Birds' might be enhanced thereby; and now, by leaving the contents of his museum to the nation, he has enriched the British Museum with several invaluable additions to its ornithological collection.

"Thus are added—the Swinhoe collection of Chinese birds, the Pryer collection of Japanese birds, the series of specimens obtained by Holst in the Bonin and Loo-choo Islands and Formosa; and last, but not least, Seebohm's own European and Siberian collections, the result of his travels in all parts of Europe, and of his expeditions to the valleys of the Petchora and the Yenesei. Of his collection of Charadriidæ, he had already presented hundreds of specimens to the Museum, but by his bequest is added the portion which formed his special series of the Plovers and Snipes, on which, indeed, was founded his great work on the geographical distribution of the Charadriidæ. He had, moreover, in contemplation a 'Monograph of the Turdidæ, or Family of Thrushes,' and in pursuance of this object he had amassed a large collection of Thrushes, which now passes into the ornithological collection of the British Museum. Nests and skeletons of birds are in plenty, and a set of the Layard collection of Oceanic birds and others from the Whitehead expedition to Kira-balu, the Prjevalski and Severtzov expeditions in Central Asia, make up one of the most important donations which the Trustees of the British Museum have ever received. Seebohm's series of skins of the Phasianidæ is one of the finest in the world, and the value of the osteological collection cannot be over-estimated, as it formed the material on which were founded his many essays on the 'Classification of Birds.' "

The Ameghino Collection of Fossil Birds.—We are much pleased to be able to announce that the entire collection of fossil bird-bones of Señor Florentino Ameghino, of Buenos Ayres, described in his article 'Sur les Oiseaux fossiles de Patagonie' (Bol. Ist. Geogr. Arg. vol. xv.), has been acquired by the British Museum. Mr. C. W. Andrews, of the Geological Department, is now engaged in unpacking and

arranging it. It includes the wonderful head of *Phororhacos inflatus* and still more wonderful jaw of *P. longissimus*, which have been described and figured by Señor Ameghino, and have been referred to by Mr. Lydekker and Mr. Andrews in their articles in this Journal (Ibis, 1893, p. 40, and 1896, p. 1).

Ornithology in New Zealand.—It is satisfactory to learn that in New Zealand, a colony which has always taken a foremost place in matters of science, the general preference for ornithological study does not diminish. The remarkable character of the Ornis, and its intrinsic interest, may in some measure account for this. We notice with pleasure that the Legislature, in its recent session, passed a Bill protecting the fine Wood-Pigeon (*Carpophaga novæ-zealandiæ*) during the whole of 1896, with the proviso that every *sixth* year shall be a strictly close season, under severe penalties, for this valuable bird. This protection is a very wise step on the part of the colony, seeing how much scarcer the Wood-Pigeon has become, owing to wholesale slaughter, during the last few years. Steps are also being taken by the Colonial Government to protect the various birds on the outlying islands from the indiscriminate depredations of natural-history collectors. A further sign of the increasing interest in the subject is the active demand for chance copies of Buller's 'Birds of New Zealand.' A copy of the second edition, now long out of print, realized £20 at Wanganui, and, more recently, a copy was bought for £21 at an auction sale in Christchurch. Advertisements are frequently to be seen in the colonial papers from persons desiring to purchase this standard work. Although the edition extended to a thousand copies (all of which were privately subscribed for), some 250 were unfortunately lost by shipwreck, on their way to the colony, and this will account, in some measure, for the scarcity of the book and the eager demand for it.

Proposed new Zoological Work.—A recent number of the 'Ornithologische Monatsberichte' (1895, p. 196) contains

an announcement that the German Zoological Society has in contemplation a very important work, which will be entitled 'Das Tierreich. Eine Zusammenstellung und Kennzeichnung der rezenten Tierformen.' The aim of this publication is, if we understand rightly, to give, on an uniform plan, descriptions of all the known species of the animal kingdom, together with their distribution and most important synonymy.

Prof. F. E. Schultze, of Berlin, is the general editor of this work, and will be assisted by specialists in the different branches of zoology. Dr. Anton Reichenow has undertaken the section of Birds, in which he has already secured the assistance of Mr. E. Hartert, of Tring, Graf von Berlepsch, Dr. Bowdler Sharpe, and Mr. Ogilvie Grant. Some of the parts relating to the Birds are stated to be already in preparation.

Movements of Naturalists.—Mr. W. L. Sclater left England on Feb. 29th to take up his appointment as Curator of the South African Museum, Capetown. Mr. Sclater will devote his attention, for the present, principally to the Mammals of South Africa, a good Handbook of the Birds (by Sharpe and Layard) being already in existence, but will not neglect to register any additions to the ornithology of Cape-land. From Nyasaland we learn that Mr. Moore has lately passed through on his way to Lake Tanganyika, whither he proceeds under the auspices of the Royal Society to investigate the fauna of the Lake. Mr. Alexander Whyte is at his headquarters at Zomba, and has just forwarded some more collections, which are shortly expected to arrive in England. Sir Henry Johnston, after his victorious campaign against Mlosi, will come to England for a short visit, upon considerations of health. Mr. John S. Gardiner has just left England as naturalist to Prof. Sollas's expedition for the investigation of the Pacific coral-reefs, and will, no doubt, improve our knowledge of the scanty fauna of the Ellice Islands. Mr. Arnold Pike has deserted Spitsbergen for the present, and has started for

Ladakh, intent upon some mysterious expedition into Central Asia. Col. Irby is paying a flying visit to his old quarters in Southern Spain, and will possibly cross to Morocco. Mr. E. C. Taylor has left Egypt and is shortly returning to England. He has, as we anticipated, succeeded in making some interesting additions to the Egyptian avifauna.

XXVI.—Obituary.

COLONEL HENRY MAURICE DRUMMOND-HAY.—We have to regret the removal, at a ripe old age, of the first President of the British Ornithologists' Union, one of the original twenty who in the year 1858 founded 'The Ibis,' and of whom, after an interval of 38 years, eleven still remain among us.

Henry Maurice Drummond, youngest son of Vice-Admiral Sir Adam Drummond, K.C.B., and Lady Charlotte, daughter of the 4th Duke of Athole, was born 7th Jan., 1814, at Megginch Castle, Co. Fife, the ancestral seat of the family, members of which, for several generations after the Union, had represented Fife in Parliament. From his childhood he was an enthusiastic field-naturalist, and when on leaving school he was sent abroad to study modern languages, in several of which he was a proficient, he spent much time in the workshop of M. Linder, at that time the best authority on the ornithology of Switzerland and the Alps. Here he practised taxidermy, which to the day of his death was the favourite resource of his leisure hours, and few could so successfully mount a bird in a natural and life-like attitude, for few were so familiar with the action of the bird in life. In June 1832 Drummond-Hay received his commission in the 42nd Royal Highlanders (the Black Watch), in which regiment he served for twenty years, at Malta, Corfu, Bermuda, and Halifax, Nova Scotia. During all this time he was unwearied in studying the ornithology and ichthyology of his different stations and of their neighbouring countries, and lost no opportunity of making excursions into districts which were at that time untouched by the naturalist. He became a

regular correspondent of Sir W. Jardine, of Yarrell, and of Strickland, who visited him in Corfu. He contributed several papers recording his observations to the periodicals of the day. Among these are:—"Notes of a Sojourn of Four Years in Corfu. The Birds of Corfu and the Ionian Islands," Ann. & Mag. N. H. 1843, vol. xii.; "Two Months in the Island of Crete," *ibid.* vol. xii., being the first notice since Belon of Cretan ornithology; "A Short Excursion in Macedonia," Ann. & Mag. N. H. 1846, vol. xviii.—a paper read at the British Association's meeting at Cork. In these papers are many interesting observations on migration, and on the notes of birds, in detecting and imitating which he was remarkably proficient. He was the discoverer of *Hypolais olivetorum* in 1835, which he pointed out to Strickland, who described it in 1837. He was also the first to detect the presence of *Hypolais elaiica* in Europe, and he described the White-necked Jackdaw as *C. collaris*, Ann. & Mag. N. H. 1846, vol. xviii. p. 11.

On the removal of his regiment to Malta, Drummond-Hay devoted himself chiefly to ichthyology, and, being a clever artist, made a splendid collection of coloured drawings of the Mediterranean fishes, working much with the late Signor Schembri. These drawings and notes he presented to the Smithsonian Institution. During these years he formed an almost complete collection of the birds of the Mediterranean countries. These, all mounted and arranged by his own hands, he placed in Megginch Castle, where they remain as heirlooms. He was next for three years stationed at Bermuda, to the avifauna of which island he made many additions. He was the captain of the grenadier company, and infused his spirit into all the men of his battalion, who were as enthusiastic as their popular captain in fishing and in collecting for him the treasures of the deep. Here, and subsequently at Halifax, he continued his drawings and notes on the fishes, which fill two large MS. volumes, but have not yet been published. He retired from the army in 1852. The colonel used to be fond of relating how he believed himself to be the last man who had ever seen the Great Auk alive. In returning to

Europe in Dec. 1852, on the edge of the Newfoundland banks he watched for some time a Great Auk, which was within 30 or 40 yards of the steamer; and as he had his field-glasses, and could distinctly note the bill and white ear-patches, he felt he could not be mistaken. He heard also from a friend in Newfoundland that in the following year a dead Great Auk had been washed ashore in Trinity Bay. This is the last trace of the giant of the *Alcidæ*. Shortly after his return, Col. Drummond joined the Perthshire Rifles, and commanded the regiment when embodied during the Crimean war, retiring as full colonel in 1872. On his marriage with the heiress of Seggieden, he took her name of Hay. For the last twenty years of his life he devoted himself to the natural history of Perthshire and Tayside, and especially to the formation of the Perth Museum, sparing no pains to enrich it with specimens of every bird found in the district, together with its nest and eggs, but always refusing to admit any specimen which was not undoubtedly local. He had the satisfaction of seeing his darling wish accomplished, and could boast that, as a *local* museum, that of Perth had few rivals. His last public appearance was at the opening of the new museum buildings by Sir W. H. Flower in November last, and his end came peacefully on the 4th January, within three days of his entrance on his 83rd year.

In these days of specialists, Colonel Drummond-Hay was a noble specimen of the true field-naturalist, as well as of the soldier and country gentleman, a keen observer of nature in every department. He was a good botanist, devoting himself especially to lichens. Few gardens could rival his in its show of rare herbaceous plants. And he found time to take an active part in public life in his county, and not least in ecclesiastical affairs, being for many years Treasurer of the Episcopal Church Synod. Long may our land produce sons like our first President, worthy successors of the Vigorses, Jardines, and Selbys of an earlier generation!

THE IBIS.

SEVENTH SERIES.

No. VII. JULY 1896.

XXVII.—*On the Nesting of Nyctibius jamaicensis and Sclerurus umbretta.* By Dr. EMIL A. GOELDI, C.M.Z.S., Director of the Museum in Pará.

+1. NYCTIBIUS JAMAICENSIS.*

The life-history of the gigantic Goatsuckers which form the subfamily of the Nyctibiinæ is not yet sufficiently cleared up. Even in 1892 Mr. Hartert, working out the part of the most useful 'Catalogue of the Birds in the British Museum' which refers to the family Caprimulgidæ, remarked that "but little is known about their habits."

The subfamily consists of one genus only, with six species, all neotropical (*Nyctibius bracteatus*, *N. leucopterus*, *N. jamaicensis*, *N. longicaudatus*, *N. æthereus*, and *N. grandis*). Of these six species I have met with in Brazil only three, namely, *Nyctibius jamaicensis* and *N. æthereus* in the southern coast States (Rio de Janeiro), and *N. grandis* in the Amazonian region (Marajó) and on the borders of Guiana (Connaný, Amapá). Mr. Hartert, whom I suppose to be well informed about all ornithological publications, old and new, cites notes upon nidification only for *N. æthereus* and *N. grandis*; another authority is, it seems, Koenig-Warthaussen, in the 'Journal für Ornithologie,' 1868. Unfortunately, I do not possess this work.

* [There is nothing original on *Nyctibius* in this article.—EDD.]

Thienemann, in his work 'Fortpflanzungsgeschichte der gesammten Vögel' (1845-56), figures, on plate xlii. fig. 20, what he calls an egg of *N. aethereus*, but the volume of text, which would give us some information as to the authenticity of the object, was never published, I believe. Burmeister in his 'Systematische Uebersicht' (1856, vol. ii. p. 375), writes that he got an egg of *N. grandis* from Beske, a collector at that time living in Novo Friburgo (Serra dos Orgãos, Rio de Janeiro). This egg was described in Cabanis's 'Journal für Ornithologie' (vol. i. p. 169); but Burmeister confessed to me afterwards personally his doubts on many identifications made by Beske*, and, as things stand, I think there is no certainty whether the egg in question was really that of *N. grandis* or of any other species of *Nyctibius*.

Burmeister (Th. Bras. ii. p. 375) says that these eggs of *N. grandis*—giving us thus to understand that there were at least two—are laid in the hollow of an open branch, without any foundation. Treating of *N. cornutus* (= *N. jamaicensis*), the same author writes (*op. cit.* p. 377) as follows:—"It is said that the bird does not construct a nest, but fixes its eggs to the tree-branches with a viscous fluid; that the nestlings remain sitting in the fixed half of the egg-shell until able to fly. But Azara's friend, Nosedá, found the real nest in the hole of a tree, with two mottled-brown eggs."

As stated above, I met with *N. jamaicensis* and *N. aethereus* in Southern Brazil, the former, a smaller species, being much more common than the latter: at least this was certainly the case in the mountains of the Serra dos Orgãos.

In my own collection, made at Colonia Alpina, near Theresopolis, during the years 1891-94, *N. jamaicensis* is represented by half a dozen specimens, *N. aethereus* only by

* This reminds me of what I have written about *Didelphys alboguttata* (P. Z. S. 1894, p. 466). I also convinced Burmeister that he had confounded together several caterpillars and butterflies obtained in Novo Friburgo, which he had identified on the authority of Beske and described and figured in his work 'Lépidoptères de la République Argentine.'

one. Both species are more or less rufous, but easily distinguishable, and any confusion about their determination is impossible.

During certain months the smaller *N. jamaicensis*, called "Urutáo" by the natives, like all the species of the group, is heard at Colonia Alpina almost every night. Its "pū-hū-hū," slowly pronounced, but with much energy, is a constant nocturnal sound, quite enough to frighten a timid wanderer in the solitary forest-patches*. On the other hand, I was often astonished at the resemblance of the voice of the large greyish *N. grandis* to the mewing of a cat. In November 1895, during moonlight nights, I had occasion to hear it at Amapá regularly. The bird called continuously in the adjacent "sirinbal" (the inundated and impassable avicennia-forests), which borders in a most characteristic manner the lower course of the coast-rivers of Guiana. At Colonia Alpina (Rio de Janeiro) we got so well acquainted with *N. jamaicensis* that the cry of the bird in the neighbourhood on moonlight nights was the regular signal for us to take up our guns and go forth on our nocturnal hunting-trips. The bird is easily deceived by imitating its voice†. Supposing the call to be that of a rival, it leaves some inaccessible and invisible standpoint in the interior of the forest and is drawn nearer to a post on some isolated dry gigantic tree, which, being in better light, offers more chance of a successful shot. Even here, however, its wonderful protective colour, its singular manner of perching in the direction of the axis of the branch and appearing like a mere protuberance of it, while it retains a motionless position for a quarter of an hour or more, render it very difficult to discern, except to very practised eyes. My cousin,

* It is not to be wondered at that the "Urutáos" are much connected with Brazilian folklore, as shown by José Verissimo in his 'Scenas da Viva Amazonica,' Lisbon, 1887, and by myself in my little work 'Aves do Brazil,' pp. 198, 199.

† On the contrary, the smaller Goatsuckers (such as *Nyetidromus*, *Antrostomus*, *Chordeiles*, &c.) are far less easily deceived and seem to distinguish the imitation much better.

Andreas Goeldi, after long experience, is a perfect *Nyctibius*-hunter. Notwithstanding our familiarity with the habits of this species of *Nyctibius*, for three years we were never lucky enough to discover its breeding-place, though we made all possible efforts. Before I left Colonia Alpina I strongly recommended the continuation of these efforts to my cousin, and likewise as regards *Hydropsalis**. At length, some months after my arrival on the Amazons, I received the agreeable news of the discovery of an authentic nest of *N. jamaicensis*. My cousin's letter was accompanied by detailed notes and photographs, and when, in August 1895, I made a journey back to Rio de Janeiro, I had, on a short visit to Colonia Alpina, the opportunity of seeing the localities and studying the facts, which were as follows:—

On the 24th of November, 1894, the son of one of our neighbours and colonists brought to us a dead male *Nyctibius jamaicensis* and a fresh egg, telling us that he had shot the "Urutáo" standing upright on the top of a stump. After having killed the bird he climbed up the stump and found, as he had supposed, that the bird had its breeding-place there. In a slight depression on the top he found the egg, which he carefully brought to my cousin, together with the bird itself. My cousin immediately went to the spot pointed out by the boy, and inquired minutely into every detail.

The locality is on a sloping hill on the left side of a brook, tributary of the Rio Alpina, which runs through a valley parallel to that of the centre of the colony. In 1891 and 1892 one of our colonists, now dead, had a maize plantation there, but since that time the ground has become what in Brazil is called "capoeira," i. e., a hill covered with shrubs and small trees of about 2 m. in height. Along the declivity of the right side of the brook, at a distance of about

* *Hydropsalis forcipata* is common in the Serra dos Orgãos. We often shot two or three specimens in the same night. But, notwithstanding the indications given about the nidification of *Hydropsalis* in Uruguay by O. V. Aplin (Ibis, 1894, p. 188), no breeding-place has yet been discovered by us at Colonia Alpina.

30 m. from the latter, is a path of communication between the different colonial lots of the valley and the forest-slopes on both sides. The stump in question is about 20 m. distant from the brook, surrounded by shrubs and easily visible from the path on the other side, and was evidently put there three years ago by the former colonist. The nearest human residences are distant from five to six minutes only.

Fig. 1.



Nest and egg of *Nyctibius jamaicensis* on the top of a stump.

The stump, still partly covered with its original bark, has a height of 1·8 m. above the level of the ground. Its diameter at top is 9·5 cm. The top has in the centre a small depression, caused by decomposition, and scarcely presents sufficient room for a rather large egg. There was no trace of a softer substratum or nest-material.

The egg (fig. 2, p. 304), which waits for an opportunity to be sent to the British Museum, measures 41·5 mm. in the longitudinal axis and 30·5 mm. in the transverse axis. Its general colour is white. On the blunt pole, however, are some very delicate pale violet spots, and irregularly distributed over the whole surface are some large ones of brownish-

rufous colour, resembling drops of dried blood. Neither the former nor the latter markings can be effaced by washing

Fig. 2.



Egg of *Nyctibius jamaicensis*.

with spirit; they belong properly to the egg, which is of a very elegant shape.

Burmeister gives the following measures for the egg of *Nyctibius grandis*:—60 mm. longitudinal axis, 42 mm. transverse axis. These measures are those of a larger egg, but the relative proportions which determine the general shape of the egg agree pretty well, being in both cases almost exactly 4.3. The assertion of the boy that he saw the bird standing upright on the top of the stump, so that he at first took the bird for an elongation of it, deserves attention, as agreeing perfectly with what I always heard from persons well acquainted with the habits of the “Urutáos.”

If these birds are rarely met with during the day, even in the region where they do not seem to be at all rare, it is evidently due to the highly protective position they assume, a position so admirably in conformity with the general colour and character of the bird that I think it to be one of the most interesting facts in natural history. The authentic fact here stated is a new proof of the supposition that the *Nyctibii* breed on suitable places on tree-branches, stumps, &c., while the smaller Goatsuckers probably all nest

on the ground. Though I am personally acquainted only with the breeding-habits of *Nyctidromus albicollis* (nests with eggs of which are of common occurrence in rough grassy meadows in the southern States of Brazil), the recent discovery of the nesting of *Hydropsalis*, made by Aplin in Uruguay, confirms this opinion.

2. *SCLERURUS UMBRETTA*.

In the solitary forests of the province of Rio de Janeiro, in the hot lowland as well as in the mountains of the Serra dos Orgãos, is sometimes observed a dark brown bird, which attracts our attention by its peculiar habits. It is fond of quiet, shady places. Exceedingly busy, it capers about quickly near and on the ground, creeps between the dry branches very like a Spine-tail (*Synallaxis*), and enters the holes and cavities formed near the roots of the larger forest-trees. Its dark colour, together with its active and lively movements, will generally at the first impression lead us to believe that we have to do with some small mammal, such as a mouse. With some attention, and when our eyes get accustomed to distinguish details in the shade of the dark and dense forest, its bird-nature will be recognized. The bird is tolerably confiding, and will allow you to approach within a distance of eight or ten steps. From time to time you will perceive a very sensible noise, produced by the bird. It has found a heap of dried leaves, and is now occupied with a careful examination of the vegetable detritus and mud often accumulated in such localities. Seizing with the bill the leaves, one by one, it throws them away vigorously. Evidently it hunts up larvæ and small insects, after the fashion of a scraping hen.

A similar impetuosity and noisy demeanour among the dry leaves of the bamboo-forest are displayed by an allied bird of the family Dendrocolaptidæ, *Anabazenops rufosuperciliatus*.

Long ago Prince Max. zu Wied had observed *Sclerurus umbretta* engaged as described above. Its noisy way of throwing leaves about we often witnessed in the extensive

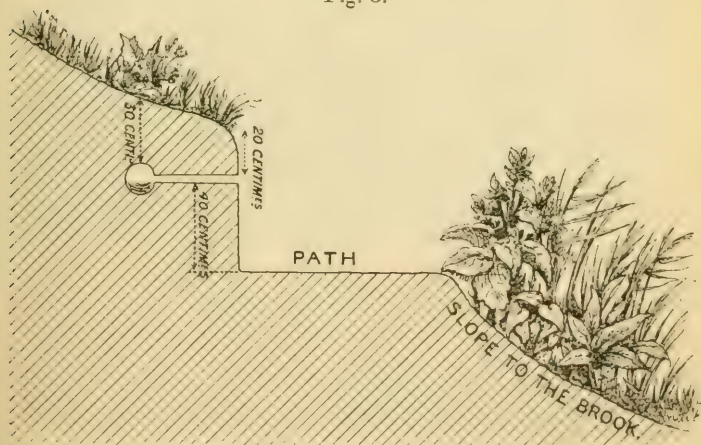
forests of Colonia Alpina, Serra dos Orgãos. The natives of this district know the bird well under the trivial name "vira-folha," that is "leaf-overthrower." Burmeister and Ménétriés, however, declare that they never observed any such action. Since the time of Ménétriés nobody has written about the nesting of *Sclerurus*, and even the description given by that author affords no clear idea respecting the matter. He writes, in his 'Monographie de la famille des Myiotherinæ' (1834):—"Cet oiseau (*Oxypyga scansor*, Ménétriés) vit solitaire dans les vieilles capouaires, sautille continuellement à terre, et se fourre souvent dans les broussailles; il grimpe aussi les vieux troncs d'arbres, où il cherche ces grosses fourmis frugivores qui abondent dans ces parages; son cri est analogue à celui de notre moineau *Fringilla domestica*; le Prince de Neuwied nous apprend que son *Tinactor fuscus* jette les feuilles en l'air, etc., ce que je n'ai pas remarqué. Dans un trou de fourmilière Termites je trouvai à deux reprises différentes deux œufs roussâtres tachetés de couleur plus foncée; ces œufs restèrent environ quinze jours à éclore, après lesquels en sortit le jeune oiseau couvert de duvet roussâtre, ayant les plumes des ailes et de la queue développées de six lignes; je fus chaque jour visiter l'endroit, et le troisième jour ces petits avaient disparu. Cette espèce est commune dans la province de Rio de Janeiro, surtout dans les vieilles capouaires près de Sumidório, à environ quarante lieues de la capitale; je la trouvai rarement dans la province de Minas Geraes" (*op. cit.* p. 521).

On the 19th December, 1894, my cousin discovered casually, on a hunting excursion, the breeding-place and nest of *Sclerurus umbretta*. The locality is in a wild and very romantic mountain-valley in the upper course of the Rio Alpina, certainly not less than from 900 to 950 m. above the sea-level. In August, 1895, I visited the spot, accompanied by my cousin, and am therefore able to enter into details on the subject.

On both sides of the brook—in the rainy season a most turbulent mountain-torrent—are steep slopes, covered with dense, high, and magnificent forests, visited only by hunters

and woodcutters. On the right slope there exists a sunken path for the woodcutters, at a distance of about 900 m. from the brook and an altitude of about 80 m. above the level of the Rio Alpina. In this steep bank, on the side of the path, in the dark and dense forest, far from any human habitation, Andreas Goeldi observed a bird creeping out of a hole. Keeping himself quiet, he soon recognized a "vira-folha," the nest of which he knew to be one of my particular desiderata. He commenced to explore the hole, which led to a covered gallery. After having examined the direction and dimensions of the gallery, he dug in continuously and discovered the nest with two fresh eggs. The hole and gallery measured 5 cm. in diameter, the shape being circular. Both were horizontal, smooth, and remarkably clean. The gallery, instead of running in a straight line, made a deviation to the right. It finished with a terminal cavity containing the bird's nest. The arrangement is shown in the following sketch.

Fig. 3.



Transverse section of nesting-hole of *Sclerurus umbretta*.

The nest itself measures 21 cm. in diameter; it is not vaulted, but flat and open. The material is somewhat intricately woven, and the nest cannot be called a master-

piece of art. The nest is formed only of the dry leaf-ribs of a certain tree; the tree seems to be a species of "Jacaranda" (*Dalbergia*), as we find on careful comparison and

Fig. 4.

Nest and eggs of *Sclerurus umbretta*.

with much practical experience in the flora of these mountain regions.

The two eggs are pure white. Their longitudinal axis measures 28 mm., the transverse axis 21 mm. The nest and eggs are preserved, and will be sent, when there is an opportunity, to the British Museum.

My cousin finally shot the bird, which had returned and was very anxious at the plundering and violation of its breeding-place. Its skin remains as "corpus delicti" in my orni-

thological collection from the Serra dos Orgãos, which I left under the care of my cousin at Colonia Alpina.

Ornithologists will see that our careful observations do not agree with the statements of Ménériés. It need not, however, be supposed that this author invented his statements. They may be explained by supposing that he confounded *Sclerurus* with some other bird. *Sclerurus* is, as Mr. Selater remarks, an isolated aberrant genus. If the statements as to its nidification and the colour of its egg, as given by Ménériés, were true, its affinity with the Formicariidæ would gain probability. But, proved as it is now that the bird is a hole-breeder and that it has pure-white eggs, the systematic position of *Sclerurus* among the Dendrocolaptidæ, as proposed by Mr. Selater, becomes a scientific necessity.

XXVIII.—*On some Chinese Species of the Genus Alcippe.*

By F. W. STYAN.

As some confusion exists as regards those Chinese species of *Alcippe* which are closely allied to *A. nipalensis* of India, I have lately attempted to clear up the difficulty by a careful examination of a long series of examples from various districts. Mr. de La Touche and Mr. Rickett have kindly entrusted me with their Formosan and Fukien specimens; my own collector sends a number of skins from Ichang, in Western China; and the fine set in the British Museum, with which the late Mr. Seeböhm's specimens are now incorporated, has been at my service.

The conclusion arrived at is that there are three Chinese forms entitled to specific or subspecific rank. I include the Formosan bird, for although the island is now politically part of Japan, it has hitherto been included ornithologically in China.

These three forms are quite distinct from the Indian species, and have certain constant characters by which they may be distinguished *inter se*. They were all recognized by Père David, who, however, subsequently modified his

opinion ('Ois. de la Chine,' p. 218), and united the two continental species to *A. nipalensis*. The species from Western China was originally described by him as *A. cinerea*, a name which, unfortunately, cannot stand, having been previously applied to another bird. I propose, therefore, to resuscitate that species, under the name of its discoverer, as *Alcippe davidi*; the Fukien bird will retain Père David's title of *A. hueti*, and the Formosan will stand as Swinhoe's *A. morrisonia*.

Thus we have :—

1. *ALCIPPE DAVIDI*, sp. nov.

A. cinerea, David, Nouv. Arch. Mus. vii. Bull. p. 14, 1871 (nec Blyth).

A. nipalensis, David, Ois. de la Chine, p. 218 (nec Hodgson).

Hab. Western China.

Of this species I have a long series of specimens from Ichang.

2. *ALCIPPE HUETI*.

A. hueti, David, Ann. Sci. Nat. (5) xix. art. 9, p. 4, 1874.

A. nipalensis, David, Ois. de la Chine, p. 218 (nec Hodgson).

A. hueti, Seeböhm, P. Z. S. 1890, p. 343.

A. hueti, Slater, Ibis, 1891, p. 42.

Hab. Fukien province; probably ranging throughout Southern China.

3. *ALCIPPE MORRISONIA*.

A. morrisonia, Swinhoe, Ibis, 1863, p. 296.

A. morrisoniana, Sharpe, Cat. Birds B. M. vii. p. 621.

B. morrisoni, Seeböhm, P. Z. S. 1890, p. 343.

Hab. The island of Formosa.

The most constant distinctive characters of these three species and *A. nipalensis* are tabulated on p. 311.

	Bill.	Flanks and under tail-coverts.	Breast.	Throat.	Supercilium.	Legs and feet in dry skin.
<i>Alcippenipalensis</i>	Yellow, a little black at base of upper mandible.	Olivaceous.	Light buff.	White.	Very distinct.	Pale yellow-brown.
<i>A. davidi</i>	Brownish black, slightly paler at extreme tip.	Olivaceous.	Light buff.	Grey.	Very faint.	Dusky brown.
<i>A. hueti</i>	Ditto.	Sandy buff, slightly washed with olive.	Light vinous buff.	Grey.	Faint.	Dusky brown.
<i>A. morrisonia</i> . .	Ditto.	Sandy buff.	Light sandy buff.	White.	Distinct.	Pale yellow-brown.

The tints of the upper parts of these species are less constant, and cannot be followed as characters, but on the average the Chinese birds are much grayer on the head than the Indian. The colour of the bill readily distinguishes the latter, but the legs cannot be relied upon in dried skins. *A. morrisonia* is the smallest in size; the others are of about the same dimensions. *A. hueti* is intermediate between the western continental and the island species.

From Ichang I have also obtained specimens of an *Alcippe* of a very different type, closely allied to *A. brunnea*, for which I propose the name

ALCIPPE OLIVACEA, sp. nov.

General colour of crown and back olive-brown, verging to fulvous brown on the rump; the feathers of forehead and crown with darker edgings, which give a scaly appearance. Wings deep brown, edged with fulvous; tail fulvous brown, brighter on the outer edges. Ring round the eye, lores, and ear-coverts fulvous, rest of sides of face and neck pale greyish brown. A broad black streak bordering the crown on each side, and extending down the back of the neck, where the two almost meet. Chin, throat, and abdomen dull white, tinged with greyish brown. Sides of breast and flanks earthy, washed with olive-brown on thighs and under tail-coverts. Bill horny brown. Legs and feet (in skin) light horny brown, claws whitish.

Tarsus 0·9 in.; wing 2·5; tail 2·9.

This species is distinguished from *A. brunnea* by its olive upper parts, long tail, and brown, instead of black, bill. Also the sides of the face and neck are almost free from the scaly appearance shown in the other species.

XXIX.—*Descriptions of some new Eggs from the Bloomfield-River District, North Queensland.* By D. LE SOUËF, Melbourne.

1. *PODARGUS PAPUENSIS*, Quoy & Gaim.

The nest of the Papuan Podargus was found by Mr. R. Hislop on October 20th, 1894. It was composed of small sticks loosely put together, somewhat similar to that of a Pigeon; it was built on the horizontal branch of a small tree and contained one white egg, of an elongated oval shape, and measuring $5\cdot44 \times 3\cdot42$ centimetres. This bird is most difficult to detect, being so much in harmony with its surroundings. When on the nest or on a branch it holds its head on a level with the rest of its body, giving it the

exact appearance of a piece of dead wood ; even the markings and colour of its broad beak are similar to those of its feathers. Not long ago I noticed the nest of a Cuvier's Podargus, and at first sight thought that some one had laid a short thick stick across it ; but on nearer view it proved to be the bird itself sitting on its two eggs. These birds remain perfectly still when roosting during the daytime.

2. *ÆGOTHELES LEUCOGASTER*, Gould.

Mr. Hislop found the nest of the White-bellied Owlet Nightjar on November 23rd, 1895, and the three pure white eggs were laid on the decayed wood at the bottom of a hollow branch of a eucalyptus tree. They are very similar in appearance to those of *Æ. novæ-hollandiæ*, but are slightly more oval. They have the same hard, thick, lustrous shell, and when rubbed together produce a sound as if they were composed of hard china. They measure : A 3.00×2.28 , B 2.91×2.3 , C 2.95×2.28 centimetres. The parent bird was shot as she flew from the nest.

3. *MYZOMELA OBSCURA*, Gould.

A nest of this little Honey-eater was found on October 23rd, 1893, during my visit to Mr. Hislop, and again on October 17th, 1895, by Mr. Hislop. The nest is cup-shaped, lightly built, composed of fine rootlets, and lined with a few long hairs, probably off cattle ; a few cobwebs were mixed with the rootlets, and cobwebs were also used to help to fasten the nest on to the twigs on which it hung. The nest measures $1\frac{3}{4}$ inch ; internal depth and inside diameter $1\frac{3}{4}$ inch. The first-mentioned was found near the top of what is locally called an "iron-wood" tree, about thirty feet from the ground and well shaded by leaves. The parent bird was secured as it flew off the nest. The ground-colour of the egg is white, lightly covered with reddish-brown spots, which are most numerous at the larger end and form a zone ; a few of the markings appear as if beneath the surface of the shell, they being of a dark grey colour. The measurements are : A 1.69×1.28 , B 1.58×1.23 centimetre.

4. *GRAUCALUS SWAINSONI*, Gould.

The shallow nest of this handsome bird was found on December 12th, 1895, by Mr. Hislop, and contained two eggs. It was placed at the fork of a horizontal branch of an iron-wood tree, about 25 feet from the ground, and was composed of casuarina and other leaves, fastened together with cobwebs. A nest of the same bird was found during my visit to Mr. Hislop in 1893, but it contained two young ones. The eggs differ considerably in colour from those of the other species of *Graucalus*, being very much lighter; the ground-colour is very light green, almost white; it is well covered with various-sized brownish markings, very slightly more numerous at the larger end, many appearing as if beneath the surface of the shell, they being of a grey tint. The measurements are: A 2.94×2.2 , B 2.91×2.17 centimetres.

5. *PACHYCEPHALA FALCATA*, Gould.

Mr. Hislop found the nest and three eggs of this bird on November 11th, 1895, and secured the parents. The nest was placed in a thick bush about twelve feet from the ground, and was composed principally of rootlets, with a few twigs of creepers, with some cobwebs on the outside to help to hold the light structure together, the lining being a few finer rootlets. It measures: internal depth $1\frac{1}{4}$ inch, external $1\frac{3}{4}$; internal diameter 2 inches, external $3\frac{1}{2}$ inches. The eggs are very similar in appearance to those of the Rufous-breasted Thickhead, but smaller; they are of an olive colour, with a zone of umber markings, the spots being more numerous on some eggs than on others and also more scattered. The zone is almost round the centre of the egg; very few markings appear on other portions. They measure: A 2.1×1.65 , B 2.09×1.64 , C 2.11×1.65 centimetres.

6. *SITTELLA STRIATA*, Gould.

The beautiful nest and three eggs of *Sittella striata* were found on August 30th, 1895, by Mr. Hislop. The nest was built between the upright forks of a branch of a eucalyptus tree, and, as is usual with nests of these birds, was exceedingly difficult to detect. It is composed almost entirely of elongated

pieces of bark and cobwebs, lined with the same material ; it is a deep cup-shaped structure, and the outside covered with these pieces of bark makes it look like part of the bough on which it is built. It has an internal depth of $1\frac{1}{2}$ inch, external 3 inches; internal diameter $1\frac{1}{2}$ inch, external 2 inches. The eggs have the ground-colour white and lightly marked towards the smaller end with large dark slate-coloured markings varying in intensity ; at the larger end they are confluent, but do not form a zone. They measure : A 1.77×1.35 , B 1.8×1.35 , C 1.75×1.32 centimetre.

XXX.—*Field-Notes on the Birds of the Estancia Sta. Elena, Argentine Republic.*—Part III.* By A. H. HOLLAND. *With Remarks by P. L. SCLATER.*

[MR. HOLLAND, who in the intervals of work continues to collect and observe the birds met with on his estancia in the Argentine Republic, again sends me a small collection to look over. The notes were written in September 1895, but the specimens, obtained during the previous breeding-season, have only lately reached me. They are referable to the following 11 species. I give Mr. Holland's field-notes.—P. L. S.]

1. PROGNE FURCATA (Arg. Orn. i. p. 24).

[A fine adult male of this species. I am still doubtful about its real distinctness from *P. purpurea*.—P. L. S.]

2. CALLISTE PRETIOSA, Cab. (Sci. Cat. B. x. p. 114).

This is the only specimen I have seen of this species.

[This is a young female of *Calliste pretiosa*, of Paraguay and Southern Brazil, and is new to the Argentine avifauna. It is probably only a straggler at Sta. Elena.—P. L. S.]

3. AGELÆUS FLAVUS (Arg. Orn. i. p. 98).

Common, and resident here in small flocks all the year breeding in the spring in the tall "paja" grass.

* See Part I., 'The Ibis,' 1893, p. 483, and Part II., 'The Ibis,' 1895, p. 213.

4. *TRUPIALIS MILITARIS* (Arg. Orn. i. p. 104).

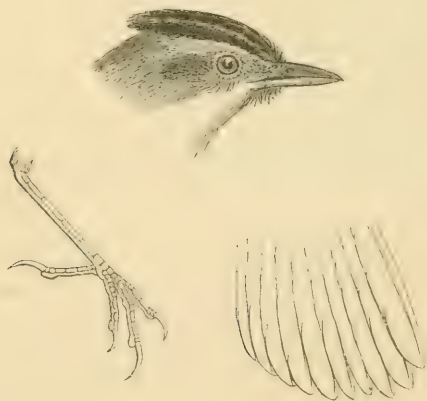
Fairly common. Resident all the year, breeding in the tall "paja" grass. It is usually seen in pairs, frequenting the high land where maize or weeds grow.

5. *TÆNIOPTERA RUBETRA* (Arg. Orn. i. p. 120).

Fairly common throughout the winter, *i. e.* from May to September, in loose flocks, which hunt insects running over the ploughed lands and bare ground. It catches its prey as the other Tyrants do.

6. *HAPALOCERCUS HOLLANDI*, sp. nov.

♀. No. 212. Rare. This bird closely resembles *Habrura pectoralis*, but I do not think it is of the same species, although it is similar, as also are its eggs, which are three in



Head, wing, and foot of *Hapalocercus hollandi*.

number and of the same creamy colour. I shall be glad to have your opinion whether it is different. My attention was called to it by its different style of flight.

[Mr. Holland is quite right. This is certainly not *Habrura pectoralis*, but belongs to the same group, and is probably

referable to *Haplocercus*. I believe it to be undescribed, and Graf von Berlepsch, to whom I have shown it, is of the same opinion.

I propose to call it after its energetic discoverer :

HAPALOCERCUS HOLLANDI, sp. nov.

Supra olivaceus, pilei plumis cristatis nigris flavicante mixtis, striga superciliari flavicante ; alis caudaque fuscis colore pallidiore limbatis ; illarum tectricibus flavido terminatis : subtus pallide sulphureo-flavus, ventre dilutiore : rostro superiore nigricante, inferiore albicante ; pedibus nigricantibus. Long. tota 4·0, alæ 1·7, caudæ 1·7, rostri a rictu 4·75 (poll. Angl.).

Hab. Argentina centr. ad prædium S. Helenæ.

This little Tyrant is most like *H. acutipennis* (Sel. Cat. B. xiv. p. 93), but is at once distinguishable by its striped and crested head, which reminds one rather of a *Serphophaga*. The fourth primary is attenuated and rather shorter than the third and fifth. The single specimen (obtained at Sta. Elena, Jan. 15th, 1895) is a female, so the wing-structure may be different in the male.

The species will go into the second section of my synopsis, with the under-surface yellow. It differs conspicuously from the two species there given in its striped and crested head.

I have written to Mr. Holland for further specimens and more information concerning this interesting species.]

7. *ANTROSTOMUS PARVULUS* (Arg. Orn. ii. p. 14).

A female. I fancy this species breeds here, but its habits are hard to follow.

8. *HYDROPSALIS FURCIFERA* (Arg. Orn. ii. p. 15).

Rare. A pair bred in a small monte of willows, but I did not discover them until the young were hatched, and then I waited until these were full-grown before shooting the specimen. This year I hope to obtain its eggs. It is easily flushed during daytime, and if much disturbed becomes very shy.

+9. PLEGADIS GUARAUNA (Arg. Orn. ii. p. 109).

This Ibis breeds here in immense colonies during November in our rush-covered lagunas. Here must have been thousands of nests, which were constructed of dry weeds, raised above the water some eighteen inches. They are well-made structures and are close to each other, as in a gully, each nest containing three eggs of an uniform intense blue.

+ 10. DAFILA BAHAMENSIS (Arg. Orn. ii. p. 135).

Of this Duck I have found nests under tall grass similar to those of *D. spinicauda*; but the eggs differ in being more glossy and slightly smaller.

11. COLUMBA PICAZURO (Arg. Orn. ii. p. 139).

♂. No. 201. Very common throughout the winter, as is also *C. maculosa*.

XXXI.—*Notes on the Nidification of some Indian Birds not mentioned in Hume's 'Nests and Eggs.'*—Part III. By E. C. STUART BAKER, F.Z.S.

[Continued from 'The Ibis,' 1895, p. 236.]

34. DICRURUS ANNECTENS. (*Oates, Fauna of British India, Birds, i. p. 312.*)

All the nests of the Dicruridæ appear to be very much like one another, and the nest of this, the Crow-billed Drongo, is not, to any appreciable extent, different from those of *D. ater* and its allies; but, taking a large series of nests into consideration, that of *D. annectens* will be found to be somewhat smaller and neater than that of any of its nearest relations, and at the same time it is even more fragile. The structures are of the usual cup-shape, measuring somewhat under $3\frac{1}{2}$ " in external diameter by about an inch in depth, and the external measurements vary considerably, according to the site and position of the nest, being sometimes as much as 5" across, at others barely 4". Fine pliant twigs, coarse grasses, and similar articles form the staple part of the materials used, these being very thoroughly intertwined and much bound

together with cobwebs, while the outside is very completely covered with scraps of bark, lichen, and moss, the edges of the nest being neatly rounded and finished off with these, and the outside, very often even of the bottom, being completely covered with the same. There is no real lining.

The eggs are undistinguishable from those of other birds of the genus, but typically they are rather warm, richly-coloured eggs. I have no eggs with a white, or even with a *very* pale pink ground. The majority are a rather deep pink—almost approximating the tint of the eggs of *Bhringa remifer*—blotched somewhat sparingly with rather light reddish brown, and again, with others, subordinate to these first, of pale lavender.

Twenty-five eggs average $0''\cdot94 \times 0''\cdot74$, and they vary between $0''\cdot88$ and $1''\cdot02$ in length and between $0''\cdot7$ and $0''\cdot81$ in breadth.

I found this bird breeding at a place called Guilang, at altitudes between 3000 and 4000 feet, in the end of April and early May, 1891, but since have never met them again. In that year they were very numerous, and I sometimes took three and four nests in a day. The nests were generally taken from thin forest or the outskirts of the more heavy. The site selected was usually from 10 to 20 feet from the ground in small horizontal branches of young trees.

Three seems to be the normal number of eggs laid, though I have found two hard-set, and have once taken four from a nest.

35. *DICRURUS CINERACEUS*. (*Oates*, op. cit. i. p. 318.)

The nest is not to be distinguished by its general appearance from those of *D. ater* and other Drongos, but, taking into consideration the whole of the very large number which I have seen, I should say that they are not quite so tidy as are most nests of this genus, the inner part—it can hardly be termed lining—often projecting over and beyond the lichen and cobwebs. Nine nests out of ten are made of exactly the same materials and of the same shape, viz. flat-bottomed, shallow cups, averaging some $4\frac{1}{2}''$ in external

diameter by something under 2" in depth. The inner cup may measure about 3" by 1".2 or less.

The materials consist of fine but strong grass-stems internally, these being wound round and round, but not much interlaced or twisted into the outer part, which is made of stems of herbaceous plants, tough but slender twigs, and coarse grasses, the whole liberally besprinkled with cobwebs, spiders'-nests, and lichen, the last usually greatly preponderating over all the rest.

The nest is generally, but not always, placed at a considerable height from the ground, and the site selected by the birds is a fork, either upright or horizontal, perhaps most often the latter, towards the summit or outermost branches of the tree. It seems always to be very strongly attached to the supporting twigs, these often being entirely covered with the materials of which it is made, or, at other times, very firmly wound round and about with the tenacious yellow cobwebs of a large black-and-yellow spider, which is unpleasantly common in all the south-eastern hills below the Himalayas.

Typically the eggs of the Eastern Grey Drongo are of a deep, warm cream-colour, with rather numerous blotches of red and reddish brown, with others underlying them of pale neutral tint or lavender-grey. This type may be matched with a few clutches of eggs either of *D. ater* or *D. longicaudatus*, but they are much more warmly tinted than the average eggs of either of these birds.

The next most common form of egg has the ground white or very nearly so, and the markings, which are smaller and more sharply defined than in the last-described sort, are of a deep purple-brown, with others of the same colour, but much paler, looking as if they had been nearly washed out. In the majority of eggs of this latter type the markings will be found to be most numerous in a broad irregular ring at the larger end and rather scarce elsewhere; in other eggs they are scattered about the whole surface, though generally less plentifully at the small end than at the large. I have seen no pure white eggs of this species.

The texture of the shell is that of the normal Drongo's egg. The shape is broad oviform typically, but all shapes occur, from the broad pegtop, which is very rare, to the more common long, narrow oval. One hundred eggs average $0''\cdot90 \times 0''\cdot73$, and they vary from $0''\cdot80$ to $1''\cdot02$ in length and from $0''\cdot68$ to $0''\cdot77$ in breadth.

The full clutch of eggs seems to number either three or four, the former most frequently.

This Drongo, like most others, is a very early breeder, April being their favourite month, while a few lay in March, and not many after the middle of May. They breed in large numbers all over the North-Cachar hills, but I have not heard of their breeding in the plains, though I think it is probable that they do so.

36. *CERTHIA NEPALENSIS*. (*Oates*, op. cit. i. p. 330.)

I have seen but one nest of this bird, which was taken on the 16th May, 1890, from a large tree growing on a peak towards the east of the Cachar hills. The elevation was close on 6000 feet. The bark of this tree was in a very ragged state, large pieces projecting here and there all over its surface in a semi-detached manner. In one of the larger of these fragments of bark, which only adhered to the tree by its basal quarter, a pair of Tree-creepers had made their nest, a small, shapeless mass of moss and moss-roots, with snug little cup of some $2''$ in diameter. It was placed at the very bottom of the hollow, and no other materials than moss and moss-roots had been used.

The eggs, of which there were three, are white, boldly, but not very thickly, spotted with light reddish, the spots being most numerous towards the larger end, at the *extremity* of which they form a fairly distinct ring. The texture is fine and close, but glossless, and the shell is strong in proportion to the size of the egg. They measure $0''\cdot59 \times 0''\cdot45$, $0''\cdot60 \times 0''\cdot47$, and $0''\cdot60 \times 0''\cdot46$.

37. *ELACHURA HAPLONOTA*.

The mode of nidification of this bird was recorded in 'The Ibis' (1892, p. 62), when I first described the bird itself.

38. PNOEPYGA PUSILLA. (*Oates*, op. cit. i. p. 343.)

This little Wren constructs two types of nests, very different from one another in character, so much so that one would almost imagine them to be built by birds of different species. Perhaps the most common position selected is one on the trunk of some tree which is covered with long pendent moss, and during April and May, 1895, I took several nests from such places, a description of any one of which would do almost equally well for all the rest.

Wandering along a road cut through heavy, evergreen forest, the trees on either side covered with most luxuriant growth of all kinds, I was attracted by the unusual heaviness and length of the brilliant green moss which covered the whole surface of the trunk of a large tree that grew beside and hung over the path. Going closer to examine it, I saw a small bird fly from out of the moss at about the level of my head, and, putting in my fingers whence it had flown, I discovered a nest and three eggs.

The first work of the bird seems to be to attach some of the loose, lower ends of the moss to small, rough projections in the bark of the tree, so as to form a rough loop beside it. It then works more and more moss into the loop—not tearing it from the tree, but using it as it grows—until it has a firm basis to work on. As soon as this is obtained it collects quantities of the fine black roots of the same kind of moss and works these in with the lining-material already used, so that finally it has a beautiful little pad securely fastened inside the living green moss on the tree. The depression in the pad for the eggs to lie in is rather shallow, about half an inch, while it may be about 2" across. Externally, of course, the size depends much on the luxuriance of the moss in which it is placed, but the comparatively solid base is generally somewhere between $2\frac{1}{2}$ and 3 inches in diameter, its depth seldom exceeding an inch, and often being considerably less. No artificial entrance is required, as the birds can easily slip in and out between the tree and the moss.

Most nests which I have found built thus, against the sides of trees, have not been very low down on them ; most

of them are placed at a height of from 4 to 6 feet from the ground, while I have taken others at heights of from 10 to 12 feet from it, and one fully 20 feet from the ground.

The other type of nest is that which I found first, and the following description will show how different it is from that already described. It is not quite so commonly found as the last, and I should think that the first type of nest numbers about three in five of all those I have either found myself, been shown *in situ*, or had brought to me. The nest I am about to describe was found in the same evergreen forest as the other, but whereas that was taken high up on a lofty peak over 4300 feet high, this was found in a valley at the foot of the peak and fully 1000 feet lower.

In this valley, in a rank tangle of grass and bushes, lay the remains of a once mighty tree, its rapidly decaying trunk obliterated with dense masses of ferns, mosses, and orchids of all kinds, among them the most prominent being the sweet-scented *Celogyne ocellata* and *Dendrobium densiflorum*. Stepping on this trunk, and clutching for assistance as I climbed at the plants, I disturbed a pair of Brown Wrens, so at once slipped quietly down again and, leaning against a tree close by, waited until they should return. In a very few minutes back they both came, and after bustling about for a short time in a very consequential manner, disappeared into what looked like a ball of live moss tucked away among a mass of yellow-flowering orchid. On approaching nearer, however, I found that the seeming lump of moss was in reality a most beautiful little globular nest, made of the brightest and freshest moss and lined with the finest roots of the same. It was wedged in well under the orchid and rested on the remains of a small branch which still jutted out from the trunk. The leaves and flowers of the orchid hanging over the entrance concealed it from any but the most careful search, while the brilliantly green moss which the bird had selected was just like that growing in luxuriant clumps all around it. Altogether it was, both in itself and its surroundings, one of the most beautiful little bird-residences which I have ever seen. Horizontally it was

about 3" in diameter, and about an inch more in height; the cavity measured about 2" or rather less, and the entrance was about an inch wide.

There seem to be no intermediate forms between these two types of nest, all those I have taken or had brought to me being distinctly referable to one or the other. Of course all are not so beautifully situated as the last-described nest, but many run it very close.

I do not think this Wren takes much care to *hide* its nest, but the way in which it builds it, either among or of the living moss itself, or among some mass of orchids, ferns, and other parasitic plants, renders it pretty well a matter of indifference to the bird whether the tree is one in an exposed position or not, and therefore there is nothing strange in the bird choosing, as it so often does, some tree standing beside a road.

Four is the full complement of eggs laid, sometimes only three, and more than once I have seen two only showing signs of incubation. They are, of course, pure white, and are of fine, close texture, very smooth and soft, but without any gloss, except in very rare instances, when perfectly fresh eggs may exhibit it, but even then only in the very slightest degree. They are very fragile, more so than smaller eggs of allied genera. In shape they are normally rather broad ovals, very little compressed towards the smaller end, which is blunt. Sometimes rather pointed specimens may be met with, and, still less often, long narrow ones, but the abnormal forms most often to be seen are such as are broad ovals rather suddenly compressed towards the smaller end, which, however, remains blunt as usual. Forty eggs average $0''.7 \times 0''.55$; the largest I have is $0''.78 \times 0''.60$, and the smallest $0''.68 \times 0''.52$. These birds breed from early April until about the middle of June.

39. *CISTICOLA TYTLERI*. (*Oates*, op. cit. i. p. 343.)

The nest of this bird is one of the most flimsy and delicate of those I know, if not the most so, often looking as if it could not bear the weight of a clutch of eggs alone, far less

that of a healthy brood of four or five young ones, together with their mother. Generally it is in shape a small purse, about $3\frac{1}{2}$ inches in height by about an inch less across the widest part. The entrance, very irregular in shape, is always very large in proportion to the size of the nest and is very roughly finished off. In general shape the nest is very much like a large egg placed on its bigger end and with the smaller sliced off in a slanting direction. It is made almost entirely of the flowering ends of fine grasses, from which most of the down and all the seeds have been stripped, but in addition to these ends there are nearly always a few narrow strips of grass-blades used also, these last sometimes being torn from dead, dry grass, at other times being quite fresh and green, contrasting with the remainder of the material. The situation most often chosen is in a tall tuft of grass, to two or three of the stems of which it is attached, the blades also being sometimes bent down and partly incorporated with the sides.

Another form of nest is just like a watch-pocket built against a large leaf of some ground-plant. The materials used are the same as in the purse-shaped nest, and the leaf is not drawn together in any way, or, at all events, only very slightly so, merely forming the back-wall of the nest. The leaf is pierced here and there to admit of the cotton-down being passed through, so as the more securely to attach the nest to the leaf; but the punctures are very coarsely bored, and the attachments look as if most roughly and carelessly put together. A few cobwebs are used about the nest itself and a few on the obverse side of the punctures, where they are massed up into sticky little balls, which prevent the materials from slipping about.

The eggs are very lovely, and show more similarity to those of *Prinia inornata* and the nearest allies of that bird than to any others of the family Sylviidae, except, of course, *C. volitans*, the Golden-headed Fantail Warbler. In ground-colour they are a beautiful blue, pale but very bright in tint, and they are either irregularly marked with bold, well-defined blotches of rather light brown or reddish brown, or else

speckled and spotted with a very deep purplish black. If the former, the blotches are of often considerable size, sometimes as much as 0".15 in their longest diameter, but if the latter they are *always* very small. The markings are seldom at all numerous in either type, and are sometimes confined almost entirely to the larger end, this being, perhaps, more often the case with the blotched than with the spotted eggs. The grain is exceedingly close, and the surface smooth and decidedly glossy, the shell being stout and strong for so tiny an egg. In shape they are broad regular ovals, very little compressed towards the smaller end, and in this, as well as in their coloration, they closely resemble the eggs of the Common Indian Wren-Warbler. Four is the number of eggs most often laid, but I have taken five from the same nest. Eighteen of my eggs average 0" 57 $\times$ 0" 46, and they range between 0" 55 and 0" 6 in length and between 0" 45 and 0" 48 in breadth.

These birds are early breeders, April and May being the usual months, but, where met with, they are so common that their nests may be found any time between the end of March and end of July, the first nest I ever saw having been taken as late as the 4th of the last-mentioned month. They are very difficult nests to find, and they are built on hills covered with a perfect sea of long grass, and the birds, moreover, give little or no assistance in discovering them. Unless it is actually raining, I do not think that the parent birds sit on the eggs at all during the daytime. I spent several days in 1891 hunting for the nests of this little Warbler, and all those which I obtained on fine days were discovered more or less by accident, for the birds were never noticed on or near the nests unless there were young which required feeding. On one day, however, when there was a continuous cold drizzle, the only two nests I obtained were both discovered owing to the bird being observed as it crept away. They are very cute and do not fly away straight from the nest itself, but creep quietly out of it and sneak through the grass for a few yards before taking wing, and then, when once they do fly, go straight away instead of staying close by and

showing anxiety as to the fate of their eggs or offspring. Rarely a nest may be found by watching the cock bird as he soars round and round, constantly uttering his plaintive little *chee-e-ah*, then, after a short while, the note ceases and the bird drops headlong down to the grass, and those unlearned in his wiles would think he had settled where he fell; but not so, for if carefully watched he may be observed skimming through the tops of the grass, often for a distance of from 20 to 50 yards before alighting. If this place is carefully marked—not an easy thing to do where all the grass seems alike—the nest may be sometimes found, often even then not until after a prolonged search.

40. *PHYLLOSCOPUS MANDELLII*. (Oates, op. cit. i. p. 411.)

At the end of March, 1889, I had a nest and two eggs brought to me, the latter of which I then identified as *P. superciliosus*, but which were really *P. mandellii*. The nest was said to have been taken from a steep bank composed almost entirely of stones overgrown with moss, in between some of which it had been placed. Outwardly it was made of fresh green moss alone, but there was a little very fine grass used in the lining in addition to numerous hair-like roots, both of moss, maiden-hair fern, and similar plants. In shape it was a completely domed oval, and, judging by its appearance, it had been placed just at the entrance of some natural hollow, as the sides were neatly rounded off and had not been compressed or otherwise made so as to fit into the sides and back of a hole. Vertically it was about $6\frac{1}{2}$ inches, horizontally about an inch less. The entrance was close to the top and was a little over an inch in diameter.

There were three eggs brought with the nest, which were white, with somewhat numerous freckles and specks of rather bright reddish scattered all over the surface, in one egg only forming a distinct ring at the larger end. In shape they are true ovals. In texture the shell is close and fine, and in all three eggs there is a faint gloss perceptible. They measure $0''\cdot61 \times 0''\cdot43$, $0''\cdot6 \times 0''\cdot43$, and $0''\cdot6 \times 0''\cdot42$.

The nest was taken on the Hengmai Peak, some 5700 feet

altitude. I have not noticed the bird elsewhere during the breeding-season.

41. ACANTHOPNEUSTE VIRIDANA. (*Oates*, op. cit. i. p. 414.)

In July, 1891, I took a nest of the Greenish Willow-Warbler very near where that of the last-mentioned nest was found. I was crossing over the Hengmai Peak, and had very nearly reached the summit, when I seated myself on a pile of loose stems to rest for a little while. The road running over this mountain is very stony, and the tanks at the sides are little more than masses of stones of various sizes, with many hollows and crevices in between them. While I was seated I noticed a small bird fly out of one of these holes, and, on looking into it, I found a large globular nest, loosely made with moss and a few dead leaves, and lined with a mass of soft white goat's-hair. Seating myself again *behind* the heap of stones, I waited until one of the birds should return, and presently the male did so and was shot, after which I inspected the nest more closely. It was placed *well* inside the hollow, and was made, to a great extent, to fit into it, so that it was very massive and also irregular in shape. Roughly speaking, it was about 8 inches in height by about $5\frac{1}{2}$ in breadth. When pulled out it lost coherence, except about half an inch thick of the inner part, the mass here having been well matted together. No leaves had been used except for the outside.

There were three fresh eggs, very different in shape, texture, and appearance from any that I have seen of the genus *Phylloscopus*. They were pure white, with very fragile shells, the texture soft and porous, although with a fine grain, and there is not the slightest gloss. In shape they are decidedly broad ovals, measuring $0''\cdot58 \times 0''\cdot41$, $0''\cdot58 \times 0''\cdot41$, and $0''\cdot57 \times 0''\cdot42$.

This is rather a common little bird in the cold weather, but I have only seen it twice during the breeding-season—once as above described, and once in 1895, in early April, when I saw a pair on the Ninglo Peak. They were flying

about a ravine with stony sides, almost devoid of all vegetation, and I feel sure they had their nest somewhere near at hand, but they would not visit it whilst I was present, and a long search proved of no avail. The birds were very anxious so long as I stayed in the ravine, and often came within a very few feet of me; but, as they seemed equally alarmed wherever I went, their movements gave me no assistance.

42. *CRYPTOLOPHA BURKII*. (*Oates*, op. cit. i. p. 424.)

Of this bird also I have taken but one nest, which I found on the 28th of April at a place called Laisung, a hot, though rather high, valley with very dense vegetation. It was built against the moss-covered trunk of a large tree standing in evergreen-forest, at an altitude well under 3000 feet. The material used was entirely moss, and the nests differed in a good many respects from any I have seen of *C. xanthoschista*, which is the most common form in these hills during the breeding-season. In the first place, the latter bird always makes a distinct lining of some kind, generally of the softest of vegetable down, which nearly fills up the whole inside. In the nest of *C. burkii* there was, indeed, a kind of lining, but it was of moss only, but this so matted, beaten, and twisted together that it was the least soft and yielding part of the whole affair. It was also a far larger, as well as more solid, structure than any other nest I have seen of this genus. It measured no less than 8".4 high and 4".2 across the widest part, and this was solid moss, well put together, which was able to withstand a good deal of rough handling. The cavity was very small, and I do not know how the bird managed to sit in it. In diameter it was 1".8, and the depth just over 2".1. The female was caught on the nest by means of a fibre noose placed at the entrance.

There were four eggs in it, very hard-set, so that they were cleaned with a good deal of difficulty and are slightly broken. They are, of course, white, and the texture is very fine and smooth, showing a slight but decided gloss; considering how hard-set they were, the shells were very stout and compact.

They are stronger and more glossy than the eggs of any other bird of this genus, with the exception of *C. poliogenys*. They measure $0''\cdot68 \times 0''\cdot51$, $0''\cdot68 \times 0''\cdot5$, and $0''\cdot67 \times 0''\cdot49$.

This little Flycatcher Warbler is very common in the cold weather, and many must breed on the higher hills, but I have been very unsuccessful in getting their nests and eggs.

43. *LANIUS CRISTATUS*. (*Oates*, op. cit. i. p. 468.)

This is one of the commonest Shrikes in Cachar during the cold weather, more so than any other except *L. tephronotus*, and a certain number of birds stay every year and breed on the ranges to the east of the district, the eastern spurs of the Barail range, which are very lofty, appearing to be their favourite resorts. All the nests that I have seen of this bird have been much the same in construction as those of *L. nigriceps*, from which they could only be discriminated by their rather smaller size, and sometimes by their proportionately more shallow shapes. They are neat, compact, and very strongly put together cups, very nearly hemispherical in shape, the depth being a little in excess in proportion to the diameter. They are made entirely of grass, the inner portion being composed of strips of sun-grass blades as well as the finer stems, and the outer part entirely of grasses in flower, so used that the flowering ends are kept outside, giving the nest at a short distance much the appearance of a ball of vegetable down. The measurements of the exterior of the nest vary a good deal, according to the amount of material used; thus some are as much as 4 inches in diameter by about $2\frac{1}{2}$ deep, while others are little over 3 inches at their widest part. The egg-chamber may roughly be said to measure on an average some $2\frac{3}{4}$ inches by about 2 or less in depth.

As a rule, four eggs are laid, but sometimes five are to be found, and a nest was once brought to me containing six young birds. The eggs, are, I think, most like the eggs of *L. vittatus* among the other Laniidæ, but differ in being larger and, on the whole, more boldly marked. The

ground-colour is generally a pale, delicate, greenish white, sometimes tinged with grey, sometimes with yellow. The markings consist of small spots and freckles of light brown, underlying which are others of pale lavender-grey and reddish neutral tint. As a rule these secondary marks predominate and give the tone to the egg; both kinds are fairly numerous in a broad, ill-defined ring at the larger end, fewer inside the ring, and even more sparse elsewhere. Eggs with a pink greenish colour, reddish superior and lavender inferior markings, are decidedly rare, and, so far as I can remember, I have come across only two such clutches. Both these were unusually boldly marked. In shape and texture the eggs differ in no way from those of the other Shrikes. With the exception of the two pink clutches, I have seen no eggs which exhibited any gloss, and even in those it was very faint. My eggs average $0''\cdot85 \times 0''\cdot7$, but I have only measured 20. The greatest length and breadth among these was $0''\cdot89$ and $0''\cdot74$ respectively, and the least either way $0''\cdot8$ and $0''\cdot66$.

44. PERICROCOTUS SOLARIS. (*Oates*, op. cit. i. p. 485.)

The only nest I have seen of this Minivet was one taken in a small ravine running down from the Hungrum Peak. It was made of fine twigs and a few coarse grass-stems; scantily dotted outside with lichen, scraps of moss, and spiders' webs—the small, comparatively, amount of these adorning materials being the thing most noticeable about the nest. There was no lining of any kind. It measured externally $3'' \times 1''$, and internally $2''\cdot75 \times 0''\cdot5$.

It contained two young and an addled egg, the latter being the darkest Minivet's egg that I have ever seen. The egg is not unlike many House-Sparrows', longer in shape and with the markings decidedly longitudinal in character. These markings are brown and inky brown in colour, others, somewhat paler, underlying them, these last also being very large. The blotches and clouds coalesce at the larger end, and are numerous everywhere except at the extremity of the small end. There is none of the reddish or purplish tint so

often perceptible in the eggs of the *Pericrocoti*; the ground-colour is of the normal pale stone-colour, almost white. The egg measures $0''\cdot89 \times 0''\cdot50$, and will, undoubtedly, prove to be an abnormally large one.

45. *ORIOLOUS INDICUS*. (*Oates*, op. cit. i. p. 502.)

I have taken two nests of this Oriole, both of the ordinary cradle-shape and quite undistinguishable from those of *O. melanocephalus* and *O. kundoo*. Both were built in masses of creepers growing over oaks, which stood in thin forest composed of that species of tree, and both were at a very great height from the ground, and were only got at after much time and trouble had been spent over them.

The eggs, of which there were two in each nest, are of the usual Oriole type; three have a decidedly pink ground, perhaps rather darker than in most eggs of this genus, and are spotted in the ordinary way with rather dark reddish brown. The fourth egg differs only in being rather paler and being rather more sparingly, though boldly, blotched with a still darker brown. Two of the eggs measure $1''\cdot09 \times 0''\cdot76$ and $1''\cdot05 \times 0''\cdot79$. The other two eggs I presented to the Asiatic Museum, Calcutta, without measuring them before doing so, but they were, if I remember rightly, both larger and longer than those I retained for my own collection.

This species is not very rare here in December, January, and February, but, with the exceptions of the birds belonging to the two above-mentioned nests, I have never seen any during the other nine months of the year.

46. *ORIOLOUS TENUIROSTRIS*. (*Oates*, op. cit. i. p. 503.)

I have never seen a nest of the Burmese Black-naped Oriole, but I once had two eggs and portions of a skin of the parent bird brought to me by one of my collectors in Silchar. They are, for Oriole's eggs, unusually small, measuring only $1''\cdot01 \times 0''\cdot74$ and $0''\cdot98 \times 0''\cdot73$. The shape also is not common, being a broad blunt oval, slightly broader in one than the other. The ground-colour is a very faint, pinkish white, and they are boldly marked with rather light reddish-brown

blotches, which are confined principally to the larger end. The nest was not brought to me, but it was said to have been of the usual pendent cup-shape, and to have been taken from the outer branches of a small babool-tree, in which it was placed some 5 feet or so from the ground.

The bird is common during the cold weather in the plains, where *O. indicus* is extremely rare, and probably a good many remain there to breed. In the hills, however, it is hardly ever met with, and the few black-naped birds which do pass through are nearly all *O. indicus* and not *O. tenuirostris*.

47. CYORNIS MAGNIROSTRIS. (*Oates*, op. cit. ii. p. 26.)

The nidification of this bird very closely resembles that of *C. rubeculoides* and *C. tickelli*, differing only in a few minor respects, among which those most easily discerned are the following :—*C. magnirostris*, taking into consideration the average condition of all the nests which I have seen, makes a rather larger and also deeper nest than does either of the Flycatchers above-mentioned, and, again, it is less tidy; secondly, the Large-billed Flycatcher almost, if not quite, invariably places its nest actually on the ground, whereas the other two species build their nests, more often than not, in hollows in old stumps or in the tangles of creepers and plants which cover them.

C. magnirostris is not common in North Cachar, but in late April or early May a few nests may generally be found in the lofty valleys to the east of the district. Here the bird generally selects some dark ravine, where it makes its nest of moss and moss-roots, lining it with the same and placing it in some natural hollow among the stems which form the banks, or else it may build it in between the roots of a tree, or, more rarely still, at the foot of some shrub. In whatever place it may be built, it is nearly always well hidden, and it would not be an easy nest to find were it not for the male bird's habit of perching close to the nest and singing its cheerful little song with great persistence and energy. Once only have I taken the nest from a hollow in a tree, and this

one was found in a stump covered with a plant, which looked like a Virginia creeper, as well as with moss and lichen. This nest was not so bulky as most, measuring only about 5", and about 2".5 in depth. The average nest would measure about 6 inches in diameter outwardly, but, of course, exact measurements can seldom be taken, the nest more or less conforming in shape to the hollow in which it is placed, and, when such hollow is rather large, it is often a very massive, bulky structure. In such cases many leaves and other scraps of rubbish are used to fill in the sides in addition to the moss of which the true nest is made. The egg-cavity is generally considerably over 2" across the top, and the depth is often as much, seldom under 1½ inch.

Four is the full complement of eggs laid. The ground is a very pale greenish stone-colour, varying a little in intensity, but never very dark, and always of a rather dull tint. As a rule, the markings are of a rather pale olive-brown, and consist of very minute specks and freckles, so numerous that they run one into another, sometimes obliterating the whole of the ground-colour and making the eggs to appear to be unicoloured a pale olive; never do the freckles leave much of the ground visible.

Two clutches—probably they are somewhat abnormal—remind one very much of the eggs of *Drymochares nepalensis* (Oates, op. cit. i. p. 188). The ground-colour is a pale greyish green, far clearer than usual, and the freckles are of a dull purplish red, and are less numerous at the smaller end than is generally the case, so that a fairly distinct cap is formed covering the larger third of the egg.

Yet another clutch has a pale yellow stone ground-colour, but this can only be seen when a very close examination is made, for it is almost completely obliterated by comparatively bright tan freckles, so that, at a short distance, the eggs appear to be a pale olive or tan-brown.

In shape they are rather long ovals, decidedly longer in proportion to their size than the eggs of any other *Cyornis* with which I am acquainted; moreover, abnormal eggs tend to be yet longer ovals rather than the peg-top, or extra

broad oval shape, which most abnormal eggs of this genus assume. The texture is precisely the same as it is in the eggs of *Cyornis rubeculoides* and *C. tickelli*, though the shell may average a shade stronger. Fifteen eggs average $0''\cdot79 \times 0''\cdot58$, and among these the largest measures $0''\cdot84 \times 0''\cdot61$ and the smallest $0''\cdot70 \times 0''\cdot56$.

They breed principally in the end of April and the first few days of May, a few late pairs not having their eggs laid until the end of that month. They affect shady ravines and cool evergreen-forest for breeding purposes, and though in the cold season they may often be seen in clump-bamboo jungle, I do not think they ever build in such places. Like all the Blue Flycatchers, *C. magnirostris* is a very close sitter, but it is a shy bird, and a nest once handled is sure to be deserted.

48. ANTHIPES LEUCOPS. (*Oates*, op. cit. ii. p. 33.)

This is a decidedly rare bird in Cachar; I have met with very few specimens, and, until May this year, 1895, never saw a nest. During this month, however, I was so lucky as to get no less than four, three containing eggs and the fourth newly-hatched young. My first nest was taken on the 3rd of May, from the bank of a small but deep ravine running through rather dense forest, at an altitude of some 4800 feet. It was placed at the roots of a small bush and was well concealed, notice being first drawn to it by the flight of one of the parent birds. Nooses made from fibres of the bark of a tree-fern which grew close by were set about the nest, and in a few minutes both birds returned. For a short while they refrained from visiting their nest, but at last one made a dive for it, going straight into the noose set at its mouth. The cries made attracted its mate, who went to see what was the cause, and, as it fortunately happened, placed his foot in another noose set a few inches from the nest. Taking the birds out of the nooses, I then examined the nest, which contained two fresh eggs. These were very different from those of the genus *Cyornis*, and differed considerably even from those of its ally *C. poliogenys*. The ground is

pure white, and the markings consist of specks, spots, and tiny blotches of rusty red, these being almost non-existent at the smaller end and sparse elsewhere, except in a dense ring at the larger end. There are no real subordinate marks, though a few of the blotches are rather pale and grey in tint. They are rather broad, blunt ovals, very slightly compressed towards the smaller end. The texture is smooth and close, but glossless and rather chalky. They measure $0''.77 \times 0''.59$ and $0''.76 \times 0''.58$.

The nest was a globular structure of grass, leaves, and a few ragged old bamboo-leaves, neither very neatly nor very compactly put together, and lined with very fine grass-stems. Outwardly it measured some 6 inches in its longest diameter by about $4\frac{1}{2}$ in breadth, the chamber being rather less than $3\frac{1}{2}$ by $2\frac{1}{2}$.

The same day as that on which the first nest was taken another, together with one of the parent birds, was brought to me by a small Naga boy, who said he had found it placed in a hollow amongst a number of loose stones lying close to the roadway, but well sheltered by thick bush-jungle. The nest does not appear to have differed in any way from the one just described, and it must have been very much the same in size, though, having been considerably pulled about, it was not possible to measure it. It contained four hard-set eggs, much like the two in the nest first taken, but rather more profusely spotted and with the ring at the larger end rather less distinctly defined. They measure $0''.72 \times 0''.56$, $0''.71 \times 0''.57$, $0''.71 \times 0''.56$, and $0''.69 \times 0''.57$.

A third nest brought to me at another place, some 2000 feet lower elevation, contained four young ones, and a fourth, taken the following day, May the 8th, contained four eggs just on the point of hatching and quite unblowable. This last nest is a shade more compact than the three others, and, in addition to the bamboo-leaves and broad grass-blades, which form the principal materials used, there are a few other dead leaves wound into the base and back. The lining of grass-stems is also very thick. In size it is about $6\frac{1}{2}$ inches perpendicularly and about 5 inches horizontally across.

The diameters of the inside are about $3\frac{1}{2}$ by $2\frac{1}{2}$, and the entrance, which is very large in proportion, is about 2 inches. The eggs differed from those already described in being less richly marked and in having no signs whatever of a ring at the larger end, the spots being more equally distributed over the whole surface of the shell. The four average $0''\cdot77 \times 0''\cdot585$.

Two other nests were exactly like the above in construction and size, but one was placed in a very thin fork of a tiny dead sapling, growing among ferns and caladiums, and, being only about 3 feet from the ground, was quite hidden by these. The other was placed in a bush, well in the centre, in an *upright* fork, not in horizontal ones, like the other two. There were two eggs in each of these nests. Those in the first were rather more reddish and not *quite* so profusely stippled; they measured $0''\cdot7 \times 0''\cdot52$. Those in the second nest were identically like the five first described, but more regularly oval in shape; they measured $0''\cdot71 \times 0''\cdot54$ and $0''\cdot71 \times 0''\cdot53$.

A fourth nest was taken from among a thick tangle of vines growing over a rocky bank. This nest was rather more bulky than the others and not quite so tidy. It contained five young ones.

The texture of the eggs is very fine and close, and there is a faint indication of a gloss, but it is not at all highly developed in any of the eggs. They are stouter in proportion to their size than are the eggs of *Cyornis*.

49. CHELIDORHYNX HYPOXANTHUS. (*Oates*, op. cit. ii. p. 51.)

I have had two nests brought to me as belonging to this bird, but I have never personally found and taken one. Of these two nests, I believe, both belonged to this little Fly-catcher, but the eggs from the two nests differ so much that one *must* be wrong, and I believe that those shown me in the first nest had been taken from some other bird's nest and placed in this one, whilst, judging from analogy, those in the second nest do belong really to *Chelidorhynx*.

The first nest was found placed on a rough slab of rock on the banks of the Laisung stream. It is a very compact little structure, with walls almost straight externally; in fact the nest is, if anything, slightly wider at the base than at the top. The whole affair is made of moss and nothing else, and there is no lining. From edge to base it is fully 2".5, which is a good half-inch more than it is in diameter. The hollow for the eggs is about 1".4 $\times$ 1". This nest contained three eggs, which look like the eggs of *Orthotomus sutorius*, the blotches on which have been almost washed out, but the texture is much coarser and stronger, and the eggs are long ovals in shape. They measure 0".61 $\times$ 0".41, 0".61 $\times$ 0".41, and 0".60 $\times$ 0".40. I accused the man who brought the nest and eggs of having changed the latter, but he strongly denied it, and said that he would catch me one of the birds, and that same day he turned up with a Yellow-billed Flycatcher which he had managed to snare. I have no idea what these eggs can be.

A second nest was brought to me on the 20th May, 1892, with the male bird, one whole egg, and two completely smashed, having been broken by the bird in its efforts to escape, as the noose in which it was caught had been placed over the nest itself. The nest is exactly like the other, but was placed on a horizontal branch overhanging the stream. It was not placed in a fork, but built on a single small branch, in the same way as the nests of *Rhipidura* are so often built. The ground-colour of the third egg is a very pale creamy yellow, almost white, and the markings consist of small blotches and spots of grey and yellowish brown, very profuse at the larger end, where they form a blurred, ill-defined ring, and rather thinly scattered elsewhere. The texture is fairly close and smooth, but without gloss, and is very fragile. In shape it is a broad obtuse oval, measuring 0".55 $\times$ 0".45.

This egg, although very distinct from, has still much of the character of the eggs of the genus *Rhipidura*, and is a regular Flycatcher's egg in appearance. Moreover, the fact that two out of the three eggs were broken by the bird does

not point to the fact of the eggs being changed or tampered with. On the other hand, the first-described eggs are not unlike those mentioned in Hume's 'Nests and Eggs,' vol. ii. pp. 30, 31.

50. CHELIDON NEPALENSIS. (*Oates*, op. cit. ii. p. 271.)

During the end of April, 1895, I had occasion to visit a Cachari village situated on the brow of a very rocky and precipitous hill overlooking the Naga-Hills territory. Having finished the business which took me to the village, I was able to bestow my attention on other matters, and I then saw that several pairs of Martins were flying in and out of some of the Cachari houses, and these flew so close to me that I was enabled to identify them as *Chelidon nepalensis* without taking the trouble to shoot one. Unfortunately, the birds had not then begun to lay, and I could only find two or three nests in a half-built state. These seemed to be very much like the nest of the common English Martin: that is to say, they were cup-shaped shells of mud, or rather semi-cup-shaped, affixed to beams *inside* the houses. There were then no finished nests, so I was unable to take any measurements. I left word with the head man of the village that I would give a reward to any one who would bring me nest and eggs with, at least, one of the parent birds, and on the 10th of May, when stopping in another place some five or six miles distant, I had a nest, four eggs, and the remains of a bird brought to me.

The nest was, unfortunately, much broken, but it appeared to have been of the usual shape, and had been fixed to one of the rafters *inside* the house in the same manner as were the partially-built nests I had myself seen. The lining was a dense mass of feathers mixed with a few scraps of grass-blades. Most of the feathers seemed to be those of fowls, which the birds had collected in the village, but there were also a few feathers of *Megalæma marshallorum*, easily recognizable by their deep purplish-blue colour, and a good many of Green Pigeons', which birds fed in great numbers on a species of *Ficus* growing near the village.

The four eggs, pure white of course, seem to be rather small in proportion to the bird, as they measure only $0''\cdot75 \times 0''\cdot46$, $0''\cdot74 \times 0''\cdot41$, $0''\cdot72 \times 0''\cdot46$, and $0''\cdot71 \times 0''\cdot46$. In shape they are long, narrow ovals, slightly compressed towards the smaller end, which is very obtuse. The texture is that of the egg of the Common House-Martin, but is rather more chalky and fragile.

In 1893, on the 28th July, I had four eggs brought to me, together with a nest *said* to belong to the bird. They were exactly like those above described, and were brought from the same village.

It is not a common bird, and even the village from which the nests were taken is only frequented by some half dozen pairs.

51. *HIRUNDO STRIOLATA*. (Oates, op. cit. ii. p. 281.)

I find it almost impossible in North Cachar to draw any line between *H. striolata* and *H. nepalensis*, but some birds which I found breeding on some hills overlooking the Laisung Valley are almost white below, with very broad striations, the wings, however, varying from $4''\cdot7$ to $5''$. These birds I am inclined to put down as *H. striolata*, as defined by Oates and others.

The place where I found them breeding is a lofty, very precipitous hill, overlooking the junction of the Laisung and Jennam streams. The south-east face consists of alternate tiers of perpendicular rock, from 5 to 50 feet high, and narrow ledges covered with grass and stunted jungle. Seeing a number of Striated Swallows constantly hawking for insects about these rocks, I made inquiries as to whether any one knew where they bred, and was told that they did so on one of the trees nearly at the summit of the mountain. I therefore sent some Nagas up to investigate, and they returned in a few hours with the information that the birds were busy building. Accordingly, the next day I went myself to see whether I could take any nests. Unfortunately, I found the hill more than I could manage with but one arm, and had eventually to stop at a ledge below where most of the birds

seemed to be congregated. Still there were a few birds about my ledge, and I could watch two pairs building only a few yards from me, and two other nests were also in sight. None of these nests were retort-shaped, all being mud semi-cups fastened against the surface of the rock, and in each case well protected by a projecting piece of rock which overhung them. None of these four nests were completed, so I ordered my two Nagas on to the next ledge, and from that they pointed out to me a nest which they said contained four eggs, and which was within their reach. On this nest I had a noose set, and, making the Nagas keep out of sight of it, soon had one of the birds captured. The nest and its contents, together with the bird, were then brought down to me, but the mud part of the nest broke into pieces as it was being removed. The mud-work was very bulky and of considerable thickness, and it seemed to me to have been much larger than the normal nest of *H. rustica*. It contained an immense mass of feathers mixed with straw, completely hidden in which were the eggs, not four, as first reported, but three only. These are pure white eggs, with a very fine smooth texture, showing a very faint gloss. They are rather broad, true ovals in shape, and measure $0''\cdot84 \times 0''\cdot60$, $0''\cdot84 \times 0''\cdot59$, and $0''\cdot81 \times 0''\cdot50$.

On a former occasion I had a nest and four eggs brought to me, with a bird of this species. The nest was just like that of *H. rustica*, and had been built between and against two rafters in a house in the Gunjong village. The eggs were, however, very richly spotted, even more so than are nine out of ten eggs of *H. rustica* or *H. gutturalis*, and I am afraid that in this case a nest of the last bird was palmed off on me as belonging to *H. striolata*, a bird of that species having been captured by the Naga. At the time this nest was brought to me a number of Striated Swallows had been observed by me to frequent the Naga houses, and I offered a reward to any one who would show me a nest *in situ*. Every year a number of *H. gutturalis* breed in these villages, and it would not have been a matter of much difficulty to knock over a Swallow of the striated form and then take a

nest of *H. gutturalis*. It is, however, just possible that the Striated Swallows *may* lay spotted eggs as well as white ones, as does *H. fluvicola*.

52. *ÆTHOPYGA IGNICAUDA*. (*Oates*, op. cit. ii. p. 351.)

The only two nests I have seen of this bird were both taken from evergreen-forest on the very highest part of the Hungrum Peak, close on 6000 feet altitude. All about here the forest has an undergrowth of bracken, ferns, caladiums, and similar plants, and it was to tall fronds of the first-mentioned that both the nests were attached. They were composed entirely of very fine seed-down, collected from the fallen pods of the simul-tree, and this down was held together with cobwebs and a few tiny scraps of green moss, and also about half a dozen fine, but very long shreds of grass. The latter passed once round the nest, in and out of the down, and then both ends were firmly attached to the frond from which the nest hung. In shape the nests are like pears, the thin end of which is *extra* thin and the lower end unusually rounded. One nest is much more drawn out than the other. The longer nest is full 5" in length, the other under 4"·5, and both are about 2"·5 in breadth, the egg-cavity measuring about 2"·5 in its perpendicular and about 1"·6 in its horizontal diameter. There is no porch or sign of a porch, and the entrance, which is near the top of the chamber, is well under an inch wide.

One nest contained three eggs, and the other only two. The latter were given away by me without any notes having been taken, but, so far as I remember, they did not differ at all from the other three. These are white, speckled and blotched with light brown, very faintly tinged with violet. Some few of the blotches are very blurred and ill-defined, but the majority are of a decidedly longitudinal character. In all three eggs the markings are most numerous towards the larger end, and they there form an indistinct ring, rather more pronounced in one than in the others, and in this egg also the blotches are somewhat darker. In shape they are broad blunt ovals, measuring 0"·55 × 0"·42, 0"·55 × 0"·42,

and $0''\cdot54 \times 0''\cdot41$. The texture is fine and close, but quite glossless, and the shell is extremely fragile.

53. *ÆTHOPYGA GOULDÆ*. (*Oates*, op. cit. ii. p. 352.)

In shape the nests of this species are like those of *Æ. ignicauda* just described, but differ in being rather larger, more bulky, and somewhat less tidily put together. In the half-dozen nests or so that I have seen, the principal material used has been simul cotton-seed or some other vegetable down, a few grasses, scraps of moss, and cobwebs being used only in sufficient quantities to hold the nest together. In one nest I found that the delicate tendrils of a small yellow ground convolvulus had been used. In all nests the grasses, moss, &c. preponderate over the cotton-down at and about where the nest is attached to the supporting frond or twig, and thence they are brought round and about the nest and underneath the bottom. The biggest nest I have taken was over 7" in length by about 2"·65 in breadth, whereas the smallest is a little over 4"·5 by 2"·2 only in breadth. The interiors of the two nests measure respectively 2"·6 $\times$ 1"·5 and 2"·8 $\times$ 1"·4. In all nests the entrance is so placed that about two-thirds of the egg-chamber is below it, and it measures from 0"·8 to about 1"·2 in diameter.

All the nests I have seen were, with one exception, fastened to fronds of the common bracken, about 6 to 8 inches from their summits. The one exception was attached to the pendent twig of a small bush growing in among a quantity of bracken. All my nests were taken at or near Hungrum at an elevation of over 5000 feet, and all were found in the same evergreen-forest as that in which the nest of *Æ. ignicauda* was taken. The bird seems to take infinite pains to conceal its nest, and there are few which are harder to find; indeed, on some occasions, I spent a considerable time watching birds which I feel sure had their nests somewhere close by, yet totally failed in finding them.

The following are the dates on which I have taken nests in different years:—

5th May: two eggs, measuring $0''\cdot52 \times 0''\cdot39$ and $0''\cdot51 \times 0''\cdot39$.

7th May: three eggs, on the point of hatching, and not measured.

11th May: two young and an addled egg, also not measured.

12th May: three eggs, measuring $0''\cdot54 \times 0''\cdot41$, $0''\cdot53 \times 0''\cdot41$, and $0''\cdot53 \times 0''\cdot41$.

12th May: nest with three young a day or two old.

18th May: three eggs, measuring $0''\cdot56 \times 0''\cdot43$, $0''\cdot54 \times 0''\cdot42$, and $0''\cdot54 \times 0''\cdot42$.

The eggs are white, and are freckled with specks and very small irregular blotches of pale greyish pink or pale brown, some so pale as to be hardly perceptible unless closely looked into, while none are very dark. In one or two eggs there are also a few short irregular lines of the same character. In one clutch and one egg of another clutch these markings are fairly numerous and *comparatively* dark, especially at the larger end; in the other eggs they are very scanty and feebly defined, more particularly in one pair, where they look as if some one had been trying to work them out with a considerable degree of success. In shape they are rather broad obtuse ovals, very little compressed towards the smaller end, and the texture is the same as in the eggs of *Æ. ignicauda*.

54. *ÆTHOPYGA DABRYI*. (*Oates*, op. cit. ii. p. 353.)

This form of Sun-bird seems to be absent from the whole of the district, except the ranges on the extreme east, and thence into Manipur, where it was doubtfully, but probably correctly, identified by Hume. None of my correspondents in the plains of Cachar and Sylhet have met with it.

On the 7th May, 1891, I took a nest of this species and captured the female on it; the male I failed to snare, nor did I get any but the most cursory glances of it, not sufficient for the purposes of identification. The nest differed most strikingly from any others of the Nectariniidæ that I have seen, in that it was shaped a very regular oval, instead

of being pear-shaped. There was no attenuation where the nest was attached to the support, but, instead, this was well incorporated in the roof of the nest itself, being surrounded by the cotton-down, as well as with fine shreds of tan-coloured grass, this material being the only one used to keep the down in position. It is a very tiny nest, measuring only $3\frac{1}{2}$ inches perpendicularly by about $2\frac{1}{2}$ horizontally, the inside being not quite an inch less both ways. The entrance is about the middle, and is an inch in diameter. Like nearly all the nests of this genus, this one was attached to a tall bracken-frond, and it was found in the same kind of forest as were the nests of *Æ. ignicauda* and *Æ. gouldiae*.

It contained three almost fresh eggs, much like those already described of the above-mentioned two species, but the markings are rather more grey in colour and freckles are more numerous than blotches. There are also very marked rings about the larger end, in one egg both freckles and blotches being practically confined to this ring and inside it. These eggs measure $0''\cdot57 \times 0''\cdot41$, $0''\cdot56 \times 0''\cdot42$, and $0''\cdot55 \times 0''\cdot42$.

55. ARACHNOTHERA LONGIROSTRIS. (Oates, op. cit. ii. p. 371.)

The nest of this bird is like that of *A. magna*, and, strange to say, is very little, if anything, smaller. The first nest I ever saw was one sent to me from Darjeeling, and, so far as one could judge from the dried remnants of the leaf sent with it, had been attached to the under side of an exceptionally large leaf of the common khydia. It was cup-shaped, and had been attached by about half its rim to the overhanging leaf, the material being drawn through most beautifully made punctures, and then knotted and twisted on the upper side together with cobwebs. The outer material in this nest was principally fine grass mixed with what looked like shreds torn from the inner soft bark of some tree, this stuff having much the appearance and feeling of soft tow. The lining was of very fine grasses, overlaid with a few skeleton leaves. The nest was too much torn to make the

dimensions of any value. At the end of July, 1887, I took a nest containing two young birds. This was of the same shape as that already described, but was attached to the lower side of a leaf of a stunted wild plantain. In measurement externally it was 4"·1 across and slightly less deep; the walls were very thick and compact, being about 0"·4 at the rim, 0"·6 just below, and almost an inch at the bottom. The materials consisted of skeleton leaves and very fine soft grass, and a few shreds of the outer bark of ekra; the lining was a mass of vegetable down most beautifully matted close to the bottom and walls of the nest.

In August, 1890, I took another nest, and a third on Sept. the 7th of the same year. Both of these in general construction closely resembled the last, but they were more oval in shape, the leaves to which they were attached forming more a back than a roof to the nest. The longest diameters of these nests were very nearly 5½ inches.

In 1891-92 I took no nests myself, but received three from a friend in Silchar, who also sent me the hen birds with two of them. Two of these nests had been fastened to large tannah-leaves, but I was not informed as to how the other was placed. They were just like those found by myself, having nearly three-quarters of the rim attached to the leaf.

In a deserted nest, which I found in 1887, the whole of the rim is fastened to the covering leaf, and the entrance is entirely surrounded by material.

In 1893 I took three more nests, built just like those already described. Two were fastened to the leaves of plants only a few feet high, the third to a plantain-leaf about 6 feet from the ground.

With the exception of one nest taken in May, 1893, and one on the 3rd June, 1892, all my nests have been taken in July, August, and September. That sent me from Darjeeling contained eggs, which had been laid about the end of April.

In the Bombay Natural History Society's Journal, no. 3, 1891, there are some interesting notes on the nidification of this species, which show that the western birds build far larger

nests than ours do here, and their nests also differ in having two entrances. None of the nests which I have seen have been thus provided, and I have no notes of any exceeding 6 inches in longest diameter, whereas some found in Kanara are nearly a foot in length. They seem also to breed early in the year in the west, whereas here I have taken a single fresh egg as late as the 9th of September, and another one was sent me which had been taken about the 15th.

I have seen 18 eggs of this little Spider-hunter, and in all the ground-colour is just the same, in one only being slightly tinged with grey; in the others it is of a pale pinky cream-colour, clear, but by no means bright in tint. The markings consist primarily of freckles and small blotches of light brownish red, some with rather a pink tinge, and secondarily of others of pale lavender and pinkish lavender. In most eggs they form an exceedingly well-defined ring, about $0^{\prime\prime} \cdot 2$ broad, in which the markings are so numerous that for about two-thirds the width of the ring they all coalesce and form a continuous mass of colour, the general hue of which is a pale reddish brown, blurred here and there with a purplish tinge where the subordinate marks show through the others. Elsewhere, as a rule, the markings are *very* scanty, and they are never numerous. On one pair of eggs the blotches form a blurred indistinct cap. On a few eggs the subordinate blotches are absent, which gives a bolder, brighter character to them, and in another egg there are about half-a-dozen rather large blotches of yellowish brown.

One egg—the one I noted above as being greyer than the others—has the markings more subdued, and also more equally distributed over the whole surface of the egg, though the ring is still very plainly defined. This egg is extremely like in character those of *Æthopyga*. Indeed, all are far more like the eggs of that genus in every respect than they are those of *A. magna*. In the latter bird's eggs the texture is close, fine, and *hard*, the surface extremely smooth, often with a decided gloss, and the shell is fairly stout. Those of *A. longirostris* have the grain fine, but *not* very close, the

texture is decidedly chalky, and the surface is without any gloss, while it is extremely fragile.

Typically the eggs are rather long, obtuse ovals, not much compressed towards the smaller end, but they vary a great deal in shape, and I have seen broad, but pointed ovals—one pair regular peg-top shape—and also narrow pointed eggs. In size, also, they vary a great deal; of the 18 eggs seen I have measurements of 12, and these vary in length between 0".76 and 0".65, and in breadth between 0".50 and 0".59, the average of the 12 being 0".72 by 0".54. If, however, the two smallest eggs be deducted, the length only varies between 0".70 and 0".76, and the average is increased to 0".73, or rather over, by 0".54. To show the variation in size and shape, I may mention that two eggs in my collection measure respectively 0".65 $\times$ 0".57 and 0".76 $\times$ 0".51.

These birds do not breed here at any great elevation, and they are more common in the plains at the foot of the hills, and thence up the valleys from 500 to 750 feet, than they are higher up, and I have not seen any nests taken at a higher elevation than 1000 feet. They generally build their nests in tree-forest with very dense undergrowth, especially in such as have it composed of plants, patches of grass, and similar vegetation, and not of bush and cane. The nest sent me from Darjeeling was taken from a forest at an elevation of over 5000 feet.

56. *DICÆUM CHRYSORRHEUM*. (*Oates*, op. cit. ii. p. 378.)

I have taken very few of the nests of this Flower-pecker, though the bird is by no means rare. Such nests as I have seen have all been of the same description and character as those made by the other Dicæidæ. They are very neat, small, oval purses, made of seed-down, cotton, and other similar material—not feathers—and lined with the very finest seed-down, collected from fallen and burst pods of bombax-trees. This lining is very neatly matted down into the nest, so as to cover the whole interior, with the exception of quite the top, and even here there is sometimes placed a small

amount. The nests are from $3\frac{1}{2}$ to $4\frac{1}{2}$ inches long, and from 3 to $3\frac{1}{2}$ inches broad, the majority measuring under $4'' \times 3''\cdot 2$. The nests I have personally taken have all been suspended to small twigs of trees and bushes at from 3 to 6 feet from the ground, and this species does not seem ever to place its nest very high up in trees, as some of its nearest relations often do. They are fastened to the twigs, which are sometimes partially or wholly surrounded with cotton, by cobwebs and a few fine grasses and fibres, which also serve the purpose of holding the other, non-adherent parts of the nest together.

My eggs—two is the number generally laid, rarely three—average $0''\cdot 63 \times 0''\cdot 45$. In shape they are broad ovals, decidedly compressed towards the smaller end, which is a good deal pointed. The texture is soft and somewhat chalky, the surface smooth but glossless, and the shell very fragile.

These birds are early breeders, April being the principal month, together with the first few days of May. They may be found during the breeding-season at all heights above 2000 feet, below which they do not seem to be commonly met with.

57. *DICÆUM OLIVACEUM*. (*Oates*, op. cit. ii. p. 380.)

This little bird, which is extremely common in N. Cachar, breeds pretty well everywhere from over 2000 feet up to the highest peaks. Its nidification differs in no way from that of *D. concolor*, the nest being a tiny purse of soft down, well matted and bound together with a few fibres and many fine shreds of grass. In size it measures some 3 inches long by about 2 broad, and the interior is often completely filled with the very finest seed-down, the ends of which often project from the entrance. Of course, as the eggs are laid and the bird commences to sit, this is all beaten down and fits properly into the bottom of the nest. I have seen no nest at all like the moss-and-grass ones found by Miss Cockburn, nor have I seen any which reminded me in the least of the nests of *Piprisoma* (Hume, 'Nests and Eggs,' 2nd ed. ii. pp. 273, 274). The Plain-coloured Flower-pecker does not appear to

be so fond of fixing its nest at great heights as is its Neilgherry relation, but, like that bird, usually selects a pendent twig, having leaves which fall over and quite screen the white little ball from view, so that it is thus a very hard nest to find.

The eggs are, I think, generally two in number; they are of course white, and are broad, rather pointed ovals in shape, very fragile, and with a chalky texture, showing no gloss. My eggs average about $0''\cdot57 \times 0''\cdot40$, which is a good deal smaller than the average of the eggs of *D. concolor*.

58. *PIPRISOMA MODESTUM*. (*Oates*, op. cit. ii. p. 383.)

This is *not* the common form of *Piprisoma* in North Cachar, *P. squalidum* being far more numerous. I have taken but two nests of this Flower-pecker, and, as might be expected, they do not differ from those of *P. squalidum*; indeed, the nests first described by Capt. Beavan on page 277, vol. ii. 2nd ed. of Hume's 'Nests and Eggs,' would do equally well for both of these species. I can add practically nothing in the way of describing them. Both were a very bright tan-red in colour, owing to the outside being entirely covered with minute scraps from the inner bark of the nayessur-tree, and both could be taken up, rolled in a ball, and danced on, and then restored uninjured to their original shape; one nest, which I kept for some five years, retained its elasticity and firmness up to the very day it was eventually thrown away by a stupid servant.

The eggs of one clutch are just like the common type of egg of *P. squalidum*. The ground-colour is pink, and it is densely covered everywhere with brownish-pink blotches, very tiny, numerous everywhere, but even more so at the larger end, where, in one, they form an indistinct cap, and in the other two equally indistinct rings; they measure $0''\cdot61 \times 0''\cdot44$, $0''\cdot59 \times 0''\cdot43$, and $0''\cdot57 \times 0''\cdot47$. In shape they are regular ovals. The shell, stouter than that of the eggs of genus *Dicaeum*, is otherwise much the same.

Another egg, an addled one, is rather peculiar in coloration. The ground-colour is of the usual creamy pink, but the

markings are very bold and are confined almost entirely to a broad, irregular ring at the larger end. They consist of large blotches of brownish red, running into and overlaying one another, the colour being, so to speak, doubled in intensity where they coalesce. There are also a good number of secondary, smaller blotches of lavender and pinky grey. Outside the ring there are but few blotches and freckles of either kind, but *inside* it they are fairly numerous. The egg is a broad oval, rather inclined to the peg-top shape, but not very pointed. It measures fully $0''\cdot64 \times 0''\cdot50$.

I have yet a fifth egg, which I believe to belong to this species, though I am not prepared to guarantee its authenticity; it was brought to me by a Naga who *afterwards* went and trapped a *P. modestum*, which he said was one of the owners of the nest. It is like the eggs of the clutch first described, but is much paler, with lighter and smaller freckles and blotches, without any signs of either ring or cap. It is an abnormally fragile egg. It measures $0''\cdot59 \times 0''\cdot43$.

59. CHRYSOPHLEGMA FLAVINUCHA. (*Blanford*, op. cit. iii. p. 28.)

These birds breed in some numbers from the level of the plains up to about 3000 feet, above which height very few birds will be met with. Most nests are found in trees standing in rather thin forest with a good deal of undergrowth, and such a forest, practically evergreen, which borders most of the smaller rivers, is the favourite haunt of the Large Yellow-naped Woodpecker during the breeding-season. Although it does not often excavate its nest-hole at any very great height from the ground, it does not, on the other hand, ever make it very low down, being in this respect very unlike *Gecinus chlorolophus*, which sometimes makes its holes barely 2 feet from the ground, at others over 40 feet from it. The majority of nests of *C. flavinucha* will be found between 10 and 15 feet up, the rest between 6 and 20. Again, it shows a marked preference for boring into the *trunks* of trees rather than into the larger limbs and branches, and for every three nests found in the former position not one will be

found in the latter. Its tunnels are seldom of any great depth, unless the interior of the tree is very rotten, being often only a few inches long.

Three is the normal number of eggs laid, sometimes only two, but one clutch which I took in May, 1890, contained four. The eggs are highly glossed and very stout, the principal thing about them being their small size when compared with the bird itself. On the average they are very little larger than the eggs of *Gecinus occipitalis*, a much smaller bird, and they cannot be distinguished from them, though, taking a large series of both, those of *C. flavinucha* may not be quite so long or so pointed.

Twenty-four eggs average $1''\cdot23 \times 0''\cdot92$, and they vary in length between $1''\cdot09$ and $1''\cdot40$, and in breadth between $0''\cdot80$ and $1''\cdot02$. They are normally broad ovals, a good deal compressed towards the small end, which is *rather* pointed. Abnormal eggs tend to be longer and more pointed, rarely to be of the broad peg-top shape.

60. *GEVINULUS GRANTIÆ*. (*Blanford*, op. cit. iii. p. 30.)

I have taken only three nests of this bird, and of these three I have kept notes about only one, which I found at Gunjong, the headquarters of my subdivision, within about half a mile of my bungalow. This nest was placed in a dead, extremely rotten stump of a tree, standing in jungle composed entirely of the small solitary bamboo, a few dead trees, which stood here and there, showing that the land had once been forest, but had been cleared for cultivation. The burrow, which was some 12 feet from the ground, looked very like a natural one, merely finished off a little bit round the edges by the birds. It just pierced through about 3 inches or less of rotten bark, and then led into a large natural hollow, about a foot in diameter and rather less in depth. It contained three eggs, broad ovals, rather compressed towards the smaller end, but not very pointed. The texture is similar to that of the eggs of *G. occipitalis*. The eggs measure $1''\cdot05 \times 0''\cdot74$, $1''\cdot04 \times 0''\cdot77$, and $1''\cdot02 \times 0''\cdot76$. This nest was taken on the 20th May, 1892.

Both the other nest-holes were in trees standing in bamboo-jungle; one just a rotten stump like that above described, the other a tree which had been ringed, but not quite deep enough, and it was still alive on one side. The eggs, which I gave away without measuring, only differed, so far as I remember, in being rather smaller.

61. *IYNGIPICUS CANICAPILLUS*. (*Blanford*, op. cit. iii. p. 46.)

Although this bird is so extremely common in Cachar, I have managed to find very few nests. It is difficult to say what sort of country or jungle it prefers, and I think, so long as the tree is suitable, the bird does not much mind where it stands. Unlike *I. pygmaeus*, *hardwickii*, and *gymnophthalmus*, which all seem to make their nest-holes not far from the ground, the Burmese Pigmy Woodpecker selects boughs at a very great height. Whilst camping in the extreme north of the district, I discovered a pair of these birds that were nesting on a small branch almost at the very top of an enormous simul. It was quite impossible to get at the nest, but with a pair of glasses I could watch the birds going in and out, which they did seemingly quite unconcerned by my looking on. As usual, the hole had been bored from the under side of the branch.

Another nest, which had been occupied for two years, had been made in a very lofty dead stump, in which also there was a nest of *Coracias affinis*. The little Woodpeckers had selected the extreme summit of the tree for their operations, and as it was a very rotten one, it was not safe for any one to attempt to get at their nest. The entrance itself could not be seen, as there was a large excrescence just below it. This tree was just outside my office.

Other nests, which I have been able to get at, have all been made at great heights from the ground, and I cannot call to mind any case in which I remember its being lower than some 30 feet from it. The hole seems to be nearly always made in a rather small branch, very rarely in the trunk itself or the larger limbs: the entrance, which

measures little over an inch in diameter, is nearly always, also, on the under side of the branch.

I think three is the number of eggs most often laid; I have not taken more than this number, and have seldom seen four young birds accompanying their parents after they were first fledged. I have only notes on five eggs—two clutches; of these, three of one clutch are all very broad ovals, obtuse, and *not* much compressed towards the smaller end, the texture fragile and, for a Woodpecker's egg, not much glossed. These three measure $0''\cdot74 \times 0''\cdot60$, $0''\cdot73 \times 0''\cdot59$, and $0''\cdot72 \times 0''\cdot58$. The other two eggs are even more blunt, but not such broad ovals; they measure $0''\cdot76 \times 0''\cdot58$ and $0''\cdot75 \times 0''\cdot56$.

62. *PYRRHOPICUS PYRRHOTIS*. (*Blanford*, op. cit. iii. p. 50.)

This handsome Woodpecker is very common in many of the lower valleys formed by the big streams, but I have been very unfortunate in obtaining its eggs. My first nest-hole was found in a stump standing in mixed jungle of all kinds; the stump was a comparatively round one, and the tunnel, with the chamber at the end, had all been bored in wood which was quite hard; yet, in spite of this, the entrance to the chamber must have been nearly 2 feet long, and it was about $2''\cdot75$ broad at the lower end and about $2''\cdot25$ at the entrance. It was about 7 feet from the ground, but, being on a sloping bank, could be reached from above. This nest was found on the 12th June, 1893, and in the same month, on the 23rd, I found another close by. It was in the same kind of stump, only more rotten, and situated in the same jungle.

The first nest contained a single egg, a very long, pointed oval, measuring $1''\cdot17 \times 0''\cdot80$, intensely glossy, and with a very fine close grain. The second nest contained four eggs, which are equally hard and close-grained, though a trifle less glossy. The shape, however, is very different, as they are much broader ovals, and also less pointed. They measure $1''\cdot13 \times 0''\cdot88$, $1''\cdot12 \times 0''\cdot87$, $1''\cdot11 \times 0''\cdot90$, and $1''\cdot10 \times 0''\cdot82$. Both nests were taken at elevations below 500 feet.

63. TIGA SHOREI. (*Blanford*, op. cit. iii. p. 62.)

I have only seen one specimen of this species, a female, caught on the nest and brought to me with its three eggs. These are very long, decidedly pointed, and extremely stout, close-grained, and glossy. They measure $1''\cdot26 \times 0''\cdot80$, $1''\cdot23 \times 0''\cdot86$, and $1''\cdot23 \times 0''\cdot80$. They are the longest, in proportion to their breadth, of Woodpecker's eggs I have ever seen. They were said to have been taken from a hole in an oak tree standing in a scattered forest of that kind of tree. The elevation was somewhere about a thousand feet, and they were taken on the 17th April, 1888.

64. CHRYSOCOLAPTES GUTTICRISTATUS. (*Blanford*, op. cit. iii. p. 65.)

This bird is mentioned in Hume's 'Nests and Eggs,' and I only enter it here as Messrs. Davison and Darling say that they have never taken more than one egg from a nest, whereas here—and I have taken many nests of this most common Woodpecker—they often lay four, and sometimes five eggs. The eggs average about $1''\cdot20 \times 0''\cdot90$.

65. COLUMBA PULCHRICOLLIS.

Two nests of this Pigeon, taken at Hungrum, about 5000 feet elevation, were of the ordinary Wood-Pigeon type—mere rough platforms of small twigs coarsely, but strongly, interlaced with one another; but they had one very distinctive and unexpected feature, namely, a sparse lining of feathers. The nests were rather large, nearly 9 inches in diameter; there was little or no depression for the eggs, these laying amongst the feathers and prevented from falling out by some of the twigs projecting beyond the others, and by the numerous interstices and small hollows in between them, in which the eggs would have caught had they moved about. Each nest contained a single egg, perfect ellipses in shape, rather coarse and stout in texture, with a dull surface, and measuring $1''\cdot55 \times 1''\cdot15$ and $1''\cdot50 \times 1''\cdot17$. Both nests were found on the same date, the 22nd June, 1891.

66. SPHENOCERCUS APICAUDUS.

This fine Green Pigeon breeds in great numbers in suitable places all over Cachar, and in some places, notably Guilang, at about 3000 feet, I have taken three and four nests in a day. The nest is the usual platform of sticks, some 6 inches in diameter, and is usually placed near the top of small saplings, such as have the most numerous boughs and twigs being most often resorted to. I have also taken their nests from very large briar bushes, only 10 or 12 feet from the ground. Two eggs are nearly always laid, but occasionally one may be found hard-set. They are just the same in shape as most Green Pigeon's eggs are, and the same in texture, perhaps even more regular ellipses than some, and also somewhat more coarsely grained, as, though beautifully pure white naturally, they stain rather easily. Fifty eggs average $1''\cdot30 \times 0''\cdot96$, in length ranging between $1''\cdot09 \times 1''\cdot37$, and in breadth between $0''\cdot87 \times 1''\cdot03$; very few eggs, however, will be found under $1''\cdot20 \times 0''\cdot92$.

These birds breed throughout April, May, and June, a few even as late as the earlier half of August.

67. ALCEDO GRANDIS. (*Blanford*, op. cit. iii. p. 125.)

The only notes on the Great Indian Kingfisher in Hume's 'Nests and Eggs' are some that I wrote a great many years ago in the 'Asian,' and in these notes I gave no dimensions. Three eggs of one clutch measure $1''\cdot10 \times 0''\cdot88$, $1''\cdot06 \times 0''\cdot87$, and $1''\cdot02 \times 0''\cdot86$. A single egg, not noticed in the above-mentioned book, measures $0''\cdot97 \times 0''\cdot88$.

68. CYPSELUS SUBFURCATUS. (*Blanford*, op. cit. iii. p. 169.)

My notes on the nidification of this bird were given by Mr. Hartert in Nov. Zool. i. p. 674 (see *Ibis*, 1895, p. 152).

69. PTILOLEMUS ANTENI. (*Blanford*, op. cit. iii. p. 153.)

On the 19th of May, 1893, I took a nest of this rare Hornbill. It was in a dead stump of a tree, some 20 feet from the ground, standing on a grass-covered hill just outside some jungle. The hollow was a large one, some 2 feet deep by about as much in diameter, and the entrance was

partially blocked by mud, though a hole was left large enough for the female to put her whole head out. The nest contained a single egg, much like many of those of *Anthracoceros*, and in colour a dull, very dirty fawn-brown. The texture is very coarse, even for a Hornbill's egg, and the surface is minutely pitted all over. The egg measures $1''\cdot87 \times 1''\cdot37$.

XXXII.—*Notes on some Birds obtained at Kalaw, in the Southern Shan States.* By Major G. RIPPON.

KALAW is a small village on the western edge of that part of the Southern Shan States which is called the Myelat, in the Hsamonghkan State. Its latitude is about $20^{\circ} 40'$ N., and its longitude about $96^{\circ} 40'$ E.

Kalaw is about 4500 feet elevation above the sea, but many small peaks round it, rising out of the plateau, reach a height of more than 5000 feet. At Kalaw itself there is a good deal of cultivation at the proper season. When I was there, however, in April last (1895), all the fields were dry, although a stream, which could have been used for irrigation, was flowing through them. Several spurs run out from the main plateau towards the low country to the west. Those near Kalaw have an elevation of from 4000 to 4500 feet, and are mostly covered with mixed jungle, while the higher knolls and ridges rising from the plateau are generally covered with pine-trees, and the difference of bird-life on the two is very marked.

I did not collect below 4000 feet, and seldom so low as this, which may account for the omission of Barbets and Woodpeckers, of many of which I could recognize the calls when I stood on the spurs looking into the valleys below. No birds met with beyond a radius of about five miles from Kalaw have been included in this paper, and I got few more of any interest until I had gone about 80 miles further east. The inclusion of familiar Burmese water-birds, shot or observed at a swamp about 16 miles east of Kalaw, and again at Fort Stedman, on the Inlè lake, appears to be useless.

I have inserted in the present paper the names of a few

species which Mr. E. W. Oates procured at Kalaw, and which I was not fortunate enough to observe myself. These bring up the total number of birds to 75.

1. *CORVUS MACRORHYNCHUS*, Wagl.

The Jungle-Crow occurs at Kalaw, whereas *C. insolens* is absent. This latter reappears, however, further east, at Fort Stedman, at 3000 feet.

2. *PICA RUSTICA* (Scop.).

Scarce, but more plentiful further east.

3. *UROCISSA OCCIPITALIS* (Blyth).

Very common; the first I saw were bullying a pair of *Dryonastes sannio* which had commenced to build in a small bush.

4. *GARRULUS LEUCOTIS*, Hume.

One specimen obtained.

5. *PARUS MINOR*, Temm. & Schleg.

All the birds shot by me resembled the specimen procured by Davison in the Salween district ('Fauna of B. India,' Birds, vol. i. p. 48).

6. *ÆGITHALISCUS MANIPURENSIS*, Hume.

Common.

7. *MACHLOLOPHUS SPILONOTUS* (Blyth).

8. *DRYONASTES SANNIO* (Swinhoe).

Very plentiful, tame and amusing.

9. *POMATORHINUS NUCHALIS*, Tweed.

Observed by Mr. Oates.

10. *MYIOPHONEUS EUGENII*, Hume.

One specimen procured.

11. *LIOPTILA MELANOLEUCA* (Blyth).

12. *LIOPTILA CASTANOPTERA* (Salvad.).

Very plentiful; perpetually calling; has a very pretty note; when one bird is heard, another generally answers it.

13. *ZOSTEROPS SIMPLEX*, Swinhoe.

14. *PTERUTHIUS AERIALATUS*, Tick.

15. *CHLOROPSIS HARDWICKII*, J. & S.

16. *PSAROGLOSSA SPILOPTERA* (Vig.).

Observed by Mr. Oates.

17. *HYPSIPETES CONCOLOR*, Blyth.

18. *ALCURUS STRIATUS* (Blyth).

19. *MOLPASTES NIGRIPILEUS* (Blyth).

Kalaw appears to be a paradise for Bulbuls; their notes are heard everywhere.

20. *XANTHIXUS FLAVESCENS* (Blyth).

21. *OTOCOMPSA EMERIA* (Linn.).

22. *OTOCOMPSA FLAVIVENTRIS* (Tick.).

Observed by Mr. Oates.

23. *PYCNONOTUS XANTHORRHUS*, Anders.

Observed by Mr. Oates.

24. *SITTA NEGLECTA*, Walden.

25. *DICRURUS CINERACEUS* (Horsf.).

The only Drongo I saw.

26. *PHYLLOSCOPUS SUPERCILIOSUS* (Gm.).

27. *ACANTHOPNEUSTE DAVISONI*, Oates.

Very common.

28. *CRYPTOLOPHA TEPHROCEPHALA* (Anders.).

Observed by Mr. Oates.

29. *SUYA SUPERCILIARIS*, Anders.

30. *LANIUS COLLURIROIDES*, Less.

31. *LANIUS NIGRICEPS* (Frankl.).

Observed by Mr. Oates.

32. *LANIUS TEPHRONOTUS* (Vig.).

Observed by Mr. Oates.

33. *TEPHRODORNIS PELVICUS* (Hodgs.).

34. *PERICROCOTUS SPECIOSUS* (Lath.).

35. *PERICROCOTUS BREVIROSTRIS* (Vig.).

Observed by Mr. Oates.

36. *PERICROCOTUS PEREGRINUS* (Linn.).

Very plentiful; I saw another Minivet, but failed to get it.

37. *ARTAMUS FUSCUS*, Vieill.

38. *ORIOLOUS INDICUS*, Jerd.

Observed by Mr. Oates.

39. *ORIOLOUS TENUIROSTRIS*, Blyth.

Common, with full-grown young in April.

40. *GRACULIPICA NIGRICOLLIS* (Payk.).

Observed by Mr. Oates.

41. *GRACULIPICA BURMANICA* (Jerd.).

Observed by Mr. Oates.

42. *ÆTHIOPSAR GRANDIS* (Moore).

43. *ÆTHIOPSAR ALBICINCTUS* (Godw.-Aust.).

44. *RHIPIDURA ALBICOLLIS* (Vieill.).

45. *PRATINCOLA CAPRATA* (Linn.).

46. *OREICOLA FERREA* (Hodgs.).

Observed by Mr. Oates.

47. *COPSYCHUS SAULARIS* (Linn.).

48. *UROLONCHA PUNCTULATA* (Linn.).

Common on the highroad, feeding on mule-droppings.

49. *PASSER DOMESTICUS* (Linn.).

50. *PASSER CINNAMOMEUS* (Gould).

51. *EMBERIZA PUSILLA*, Pall.

52. *MELOPHUS MELANICTERUS* (Gm.).

53. *HIRUNDO SMITHII*, Leach.

Common, and the only Swallow seen.

54. *ANTHUS MACULATUS*, Hodgs.

55. *MOTACILLA OCULARIS*, Swinh.

Observed by Mr. Oates.

56. *ALAUDA GULGULA*, Frankl.

The Sky-Lark of Kalaw, being of considerable size, may perhaps be assigned to *A. arvensis*.

57. *ÆTHOPYGA SANGUINIPECTUS*, Wald.

Common.

58. *DICÆUM IGNIPECTUS* (Hodgs.).

59. *DENDROCOPUS CABANISI* (Malh.).

Observed by Mr. Oates.

60. *DENDROCOPUS ATRATUS* (Blyth).

61. *HYPOPICUS HYPERYTHRUS* (Vig.).

62. *IYNGIPICUS CANICAPILLUS* (Blyth).

63. *MEGALÆMA VIRENS* (Bodd.).

In the hot weather the hills round Kalaw resound with the note of this Barbet.

64. *CORACIAS AFFINIS*, McClell.

65. *CERYLE VARIA*, Strickl.

66. *CUCULUS CANORUS*, Linn.

Calls all through the moonlight nights.

67. *CUCULUS MICROPTERUS*, Gould.

68. *EUDYNAMIS HONORATA* (Linn.).

69. *COLUMBA INTERMEDIA*, Strickl.

Common about the monasteries.

70. *TURTUR MEENA* (Sykes).

71. *FRANCOLINUS CHINENSIS* (Os.).

Very common, and furnishes a welcome change of diet.

72. *TURNIX TAIGOOR* (Sykes).

One pair observed, flushed out of some bushes.

73. GRUS ANTIGONE (Linn.).

Probably a wanderer from the big swamps at Heho, 16 miles east.

74. LOBIVANELLUS ATRONUCHALIS, Blyth.

Two small flocks were always to be seen in the dry rice-fields near the village.

75. GALLINAGO STENURA (Kuhl).

Only one seen in April. They are found further east in the month of May.

XXXIII.—*Notes on some Species of the Families Cypselidæ, Caprimulgidæ, and Podargidæ, with Remarks on Sub-specific Forms and their Nomenclature.* By ERNST HARTERT.

(Plates VI. & VII.)

HAVING recently gone over the same ground as five years ago, I find that in a new list of Goatsuckers and Swifts I shall have to make quite a number of alterations and additions, and I wish to explain and to discuss some of the points in the following pages. I sincerely hope that nobody will blame me for inconsistency in cases where I do not agree with my own former conclusions. To my mind it is much more truthful and honourable to our beloved science to correct one's own mistakes, admitting that one has altered his opinions for (at least what one believes to be) the better, or that one has gained new knowledge in the course of time, than to adhere with obstinate consistency to what one has written before.

As regards my treatment of closely allied forms, it may be known to my colleagues that I am a strong advocate of the study of *subspecies*, not because I like them, but because I see that there is something more than species only. This is one of the revelations brought home to zoologists by Darwin and his school, and unless we close our eyes and ears against the facts before us, we must not merely admit that sharply separated species do not alone exist, but we must

also acknowledge this fact in our systematic treatment of such forms, and recognize it in our nomenclature, or both our work and its nomenclature will be inadequate and insufficient. To my mind it is of just as much, or perhaps of more interest and importance to see that a species grades, for example, from a small and dark western form into a large and pale eastern form, so that, if the extremes only were known, they would be readily recognized as "good species," as to discover that a genus contains, for example, ten species instead of nine. A mistake, however, in my opinion, is generally made in speaking of so many species *and* so many subspecies, as if the latter existed besides the former, while, in fact, the subspecies are subdivisions of the species; and it would be more correct to say that there are so many species *with* so many subspecies, as if the latter formed parts of the species. Thus, instead of enumerating (1) *Acredula caudata*, (2) *A. caudata rosea*, as if they were two species, we should speak of the Long-tailed Tit, *Acredula caudata*, and we should divide this into (a) *A. caudata typica* and (b) *A. caudata rosea*. To name the subspecies, *i. e.*, such forms which cannot rank as full species, is as important and as necessary for our convenience as it is to name the species, for they must be quoted, and it is out of the question to give diagnoses of them whenever they are spoken of. In the case of *Acredula*, for example, there seems no difficulty whatever in naming the second form (b) *A. caudata rosea*. The trinomial is, for such cases, most convenient, and undoubtedly the shortest way. To name the subspecies in the same binomial way as the species is unquestionably wrong, since we do not consider them to be species! If our learned friend, Dr. Sharpe, writes *Corethrura reichenowi*, subsp. nov., then he does the same that the "trinomialists" do: it is naming a form which is *not a species*, and yet he names it exactly like a species. If then it is quoted afterwards with his binomial name, it is impossible to recognize that it is not meant to be a species. To term it, on the other hand, *Corethrura pulchra reichenowi* at once simplifies matters and shows what the form in question is considered to be. There cannot be a simpler and

more convenient method, and yet Dr. Sharpe calls it a clumsy method ; but I cannot help considering the way of saying "*Corethrura pulchra* subsp. *reichenowi*" much more so.

In any case, even if the trinomial plan is not used, the naming of the subspecies that we separate from the originally described form is the least part of the trouble. The difficulty is how to name the other form ! The Long-tailed Tit is generally called, if I may be allowed to use again the former example, *A. caudata* pure and simple. But that is not sufficient, because when only this expression is used we are not always certain whether the author means to restrict that name to the white-headed eastern form, or includes in it all the forms of the species. If, therefore, the first-named form alone is intended, it ought to be expressed in the way of naming it. The best way seems to me to call it *A. caudata typica*, and this method has already been employed by ornithologists and by Mr. O. Thomas and Mr. Selater in mammalogy. This is decidedly better than to name it *A. caudata caudata*, as has been proposed on the Continent ; but this kind of nomenclature has been used, so far as I am aware, only in a few entomological papers. This repeating of the specific name seems specially awkward in the cases of the unavoidable tautonymic names, where such names would occur, as *Perdix perdix perdix* ! If this sort of cubic nomenclature can be avoided, pray let us do so. When the author's name has to be added, Mr. O. Thomas and others (myself included) have written *A. caudata typica* (Linn.), and I have also seen *A. caudata caudata* (Linn.). Both methods are decidedly wrong, for Linnæus, or whoever was the original author of the species, had, in most cases, no idea of there being any closely-allied subspecies ; and if they knew the form, they would, in former days (as is often done now, I am sorry to say), either have included it in the synonymy of their species ("lumper"!) or have separated it specifically ("splitter"!). The original author of the first-named specific form should therefore not be made responsible for our subspecies. We should write *Acredula caudata* (L.) *typica*, or, if the other (clumsy) method is used, *Acredula caudata* (L.) *caudata*. The term *typica* stands thus

without an author's name attached to it, not treated like a new name, but merely as an acknowledged term to designate that form of the species under consideration which was first introduced into science. I may be allowed to add that the *first-described form* must, for practical reasons, always be called the "typical" one, and that the question of the real ancestral or oldest form should *not* be taken into consideration when establishing this sort of nomenclature, because we are but very seldom able to say, *a priori*, which form existed first, and because any other consideration than simple priority would lead to a constant disturbance of our trinomial nomenclature. In cases where a species of the genus is already named "*typicus*" (which cases are rare), the name might, *faute de mieux*, be repeated, or a new name for the should-be *forma typica* may be invented. Such questions are left more or less untouched in most "Codes of Nomenclature," and therefore I wish to call the attention of all friends and students of exact systematic work to them.

Other distinguished authorities—contrary to Dr. Sharpe, who calls them by binomial names—do not name subspecific forms at all, though they have a good notion of their existence. Let us take, as an example, *Caprimulgus macrurus* in Blanford's 'Birds of India.' Under that binomial title are included such different forms as *C. albonotatus* and *C. atripennis*. Although these are best considered as subspecies, and not as species, because they are connected by intermediate forms with *C. macrurus*, the extremes of these forms are so different that every student who enters the field will regard them as different species, they, *i. e.*, the extremes, being more distinct from each other than many forms universally recognized as species. I am sure that no Indian field-ornithologist would understand the uniting of *C. albonotatus* from North India with the Ceylonese *C. atripennis* under one name, and that he would gain much more knowledge, and comprehend much better their relations, if they were treated under different heads as *subspecies*, as then he understands that they are not considered identical, though they intergrade—intermediate specimens, when met with, being also thus

explained. Indeed, the relationship of many forms is the better understood the more subspecific forms are recognized (supposing that there is any foundation for them); and it being evident that such forms exist, they *must*, in my opinion, be recognized, because to disregard them altogether is as unscientific as to treat them as well-defined species. It is impossible to deny the existence of subspecific forms, and it is wrong to treat them as species, because intermediate forms occur; therefore we must agree that the *scientific systematic treatment of living animals DEMANDS the recognition of subspecies*, if systematic zoology is to be more than a pastime, and if it is to take the important place in science which it ought to hold.

The Genus MICROPUS.

In the genus *Micropus* (*Cypselus*, auctt. mult.) I have to recognize two more species—i. e., *M. shelleyi*, Salvad., and *M. willsi*. With regard to the former, I refer to my remarks on p. 445 of Cat. B. xvi., and have to add that I have seen one more perfectly adult skin (now in the British Museum), which has convinced me that it is a distinct species, resident in the mountains of Shoa and Abyssinia, and characterized by its shorter wing (6.1 in.) and shorter (2.75 in.) and less pointed rectrices.

I have been looking through my old note-books, and find that in none of the numerous nests of Common Swifts which I have taken and seen on the Continent were there more than two eggs or two young birds. Several of my friends assure me also that they never heard of more than two eggs in a clutch. Nevertheless, in almost every book the number of eggs of the Swift is given as two or three, or sometimes even four. I am anxious to hear from the members of the B. O. U. whether this is, as I believe, a story repeated from one book into the other, or whether anyone has himself taken a clutch of more than two eggs of the Common Swift.

M. murinus, Brehm (= *M. palhdus*, Shelley), which I treated as a subspecies in the Catalogue, is so very distinct from *M. apus typicus* that most writers regard it as a good

species. I should be quite willing to do the same, were it not for some specimens in the British Museum which stand somewhat between the two. There is no constant difference except in the paler colour. I have also recognized the eastern bird as a subspecies, calling it *pekinensis*; but I must admit that it is by no means so distinct as *M. murinus*, and that it is very difficult, and often impossible, to say to which of these forms a given specimen should be referred. Nevertheless, I think it was just as well to accept the eastern paler form as a subspecies, as such a recognition draws general attention to it, and may better tend to further enlightenment on the subject, than if it had been passed over in silence.

I have no evidence that *M. murinus* ever breeds south of the Mediterranean. Mr. Whitaker (above, p. 97) says that *M. apus* breeds "at Tunis and other towns in the north of the Regency"; but he kindly informs me (*in litt.*) that specimens were not shot, or at least not preserved, and therefore his statement is open to doubt. I have seen specimens from the north coast of Tunis, shot during the breeding-time, which were all *M. murinus*, and it is not likely that both breed in the same places.

The white-rumped Swifts of Tunis, which were recorded as *M. affinis* by Koenig, are described as a new species (*M. koenigi*) by Reichenow. They are, however, in my opinion, not specifically different, but may be regarded as an extreme *M. galilejensis*, Antin., if that form is kept subspecifically distinct (see Cat. B. xvi. pp. 454, 455). Peruvian examples of *M. andecola* have been separated as *M. a. parvulus* by Berl. & Stolz. (P. Z. S. 1892, p. 384), on the ground that they are smaller; but I am not convinced that the small size is peculiar to Peruvian birds, for the skins in the British Museum do not agree with that theory.

M. niansæ, Rehw., which I had not seen when writing the Catalogue, is a good species, and may be described as a very small *M. æquatorialis*.

The above-mentioned *M. willsi*, described in 'Novitates Zoologicæ,' iii. pt. ii., shows a similar relation to *M. melba*,

from which it is distinguished by its very small size and by the less extended white colour on the underside only. The discovery of *Uratelornis chimera*, Rothsch., and of this interesting Swift would seem to indicate that the avifauna of Madagascar is not yet entirely explored, in spite of the many collections made there and of the excellent works written on it.

In the measurements of *Tachornis batassiensis* in Cat. B. xvi. p. 466 is a misprint (or slip of the pen), the lateral rectrices being 2·5, not 3·5 inches in length!

4. *Chætura zonaris pallidifrons*, subsp. nov., is a new subspecific term which I must introduce for the large West-Indian Spine-tailed Swifts. I noticed the difference of the West-Indian specimens when writing the Catalogue of Swifts, and kept the synonymy of the continental and West-Indian birds separate, and made remarks about them on p. 477. However, being cautioned most kindly by Mr. Salvin, who gave me so much valuable advice during my work, I refrained from distinguishing the West-Indian form. Now recently I have been able to study quite freshly-moulted birds, in most beautiful skins, sent by Mr. C. B. Taylor from Jamaica to the Tring Museum, and I find that they show the same characters as those in the British Museum—*i. e.*, a pale forehead and a short and very narrow, but very obvious and well-defined supraloral line. I therefore do not hesitate any longer to separate this form subspecifically.

In the description of *Chætura cassini* on p. 488, it should be: "sides of body and under wing-coverts," instead of "under tail-coverts."

The Genus COLLOCALIA.

In 'The Ibis' (1895, p. 459), in one of his careful and excellent articles on Philippine birds, Mr. Ogilvie Grant described a new *Collocalia*, which he named *C. whiteheadi*. In the following pages he made some valuable remarks about *C. lowi* and about *C. fuciphaga* and its allies. With regard to the latter, it is quite evident, from my words on p. 501 of the Catalogue, that I, when stating the differences of

my subspecies *C. brevirostris*, inadvertently took for comparison with the latter skins from the Indian Peninsula only, which I considered to be the same as those from the Islands. Unfortunately I had overlooked the fact that the tarsus is nearly always thinly feathered in insular examples of *C. fuciphaga*, while the Nilghiri birds have invariably quite unfeathered tarsi. It becomes, therefore, necessary to recognize the Indian *C. unicolor* as a subspecies, though I am not prepared to call it a species, as the feathers on the tarsi cannot, in some cases, be found in insular examples of *C. fuciphaga*—for example, in some Celebes skins,—and as the differences in colour are slight, and sometimes birds from the Islands cannot with certainty be distinguished by their colour from Nilghiri specimens. It is, of course, not impossible that the Celebes birds or others may be separated as subspecies at a future time, with the help of much good fresh material, but, from all I have seen, I cannot at present find characters for a new subspecies. However, though I admit fully the correctness of Mr. Grant's observations, I see no reason for his not allowing as a subspecies *C. brevirostris* from the Himalayas, which has (as Mr. Grant admits) a constantly longer wing and a somewhat paler rump. I would consequently now arrange the group of *Collocaliæ*, without white on the abdomen and without a distinct whitish rump-band, as follows:—1. *C. whiteheadi*, Grant; 2. *C. lowi* (Sharpe); 3. *C. fuciphaga* (Islands), with its subspecies *C. f. unicolor* (Indian Peninsula and Ceylon) and *C. f. brevirostris* (Himalayas).

A very unfortunate mistake has been made on p. 434 of vol. xvi. of the Cat. B., where a synopsis of families (by the Editor) is given, which reads as follows:—

- a. Palate ægithognathous: *Cypselidæ*.
- b. Palate schizognathous: *Caprimulgidæ*.
- c. Palate desmognathous: *Steatornithidæ*, &c.

Now the palate has *never*, as yet, been found to be schizognathous in any member of the family Caprimulgidæ! I cannot, for certain, say where the mistake originated, but I find it made by Seebohm, and by Sharpe ('Review of

Recent Attempts to Classify Birds'). It was then repeated in Cat. B. xvi. p. 434, and, I am sorry to say, also by me, when stating the principal characters of the Caprimulgidæ (Cat. B. xvi. p. 519). How I came to repeat the error I do not know, but it was unpardonable, no doubt.

According to most valuable and kind information of Dr. R. W. Shufeldt, of Washington, D.C., the palate is ægithognathous in *Caprimulgus europæus*, *C. vociferus* ("Antrostomus"), *Phalaenoptilus nuttalli*, *Nyctidromus*, and others, while it is distinctly desmognathous in *Chordeiles* (several species examined). With regard to *C. europæus*, the palate was also found to be ægithognathous by Sharpe (see 'Handb. Brit. Birds,' vol. ii.), and I can confirm this, and the desmognathous palate of *Chordeiles*, from my own inspection. See also Huxley (P. Z. S. 1867, pp. 450-451, f. 35) and Dr. Shufeldt's important investigations (P. Z. S. 1885, pl. lix.; Journ. Linn. Soc. Lond., Zool. xx. pl. xx.), and others. It is very remarkable, and an important proof that single characters of that kind cannot safely be used to diagnose families, that among the Caprimulgidæ we find palates which are of different constructions. The value of the structure of the palate as a taxonomical character has undoubtedly been overrated.

Chiefly instigated by the small *Caprimulgi* found by Prof. Koenig in Algiers, and by the very small specimen shot by Mr. Grant on the Salvages, I have paid more attention to the southern specimens of *C. europæus*, and have found that those from South Spain are generally very short-winged, but very dark—in fact, about the darkest birds of all, like West-European specimens in general; that most of those from Algiers and Tunis are rather small, and some rather paler too. Recently also I have received a good series from Greece, from Mr. W. Schlüter, which are all very short-winged, while many, though not all, of them are somewhat paler than West-European forms. It is therefore evident that Southern birds (of course wanderers excepted) are short-winged, and may be separated as a subspecies, which may be named *C. europæus meridionalis*, while they are darkest in the west,

and towards the east they show a tendency to become paler (*cf.* Cat. B. xvi. p. 527, under "*Hab.*").

Mr. Ogilvie Grant, in his remarks in 'The Ibis,' 1894, pp. 502 and 518, holds Lord Tweeddale and me to blame for not having separated from *C. manillensis** the single specimen of a Goatsucker collected by A. B. Meyer in Celebes. With a good series of *C. manillensis* before him, he found that they *always* have only the terminal portion of the *inner* web white, while the Celebes bird has both webs tipped with white and the rectal bristles longer. These observations are quite correct, and I had noticed these differences when working out the Caprimulgidæ for the Catalogue, but being very anxious to avoid the naming of any "bad" new species, and not having seen many *C. manillensis*, I did not dare to separate that single specimen. Now, having examined many more *C. manillensis*, I quite agree with Mr. Grant that the Celebes bird should be kept apart, but I object to his sentence that "two more totally distinct species of Goatsucker can hardly be imagined." These words are about as gross an exaggeration as can be "imagined," for (let alone the magnificent "Goatsuckers" of aberrant genera) a glance at any collection of the genus *Caprimulgus* only will show that the majority of species are more widely different from each other than *C. manillensis* from *C. celebensis*.

On the same page Mr. Grant speaks of *Lyncornis mindanensis* being obtained in Luzon. The specimens collected there by Mr. Whitehead are certainly *L. mindanensis*, if the latter is specifically different from *L. macrotus*; but I looked upon the two (*op. cit.* p. 605) as representative forms inhabiting Luzon and Mindanao, and even now doubt their specific distinctness, though we must still learn more about them before we finally decide.

Mr. W. T. Blanford, in his admirable volume (iii.) on the 'Birds of India,' p. 189, says: "Somewhat to my surprise, I found the South-Indian and Ceylon *C. atripennis* identical with typical *C. macrurus* from Java (the original locality). It is a small bird of very dark colour, the primaries without

* The author is *not* Gray, who never described it!

any rufous markings in adult males." We find, consequently, *C. atripennis* included in the synonyms of *C. macrurus*. Sorry as I am to disagree, even in the slightest point, with a zoologist like Mr. Blanford, I cannot help recognizing differences between *C. atripennis* and *C. macrurus*. In the former the white spot beyond the middle of the second primary is separated in the middle, that on the inner web not reaching the shaft, while in the latter it is continuous, that on the inner web reaching, or broadly touching, the shaft. In the grand series in the British Museum is, I believe, only one skin of *C. macrurus typicus* in which the white spot on the second primary is separated in the middle, and it is continuous in none of those of *C. atripennis*. The crown of the head in *C. atripennis* seems to be of a somewhat finer mottling, and the black spots are more strictly confined to a limited line along the middle of the head, while they are not so median, but rather scattered over the centre parts of the head, in *typical C. macrurus*. In well-prepared skins I find this character very constant, though it is not a very striking one to the casual observer. However, the spots are also very mesial in the large and pale *C. macrurus albonotatus*, and there is a skin in the Hume collection "the size of *C. atripennis*, but with the coloration of *C. albonotatus*" (Blanford, l. c.). Under these circumstances, and bearing in mind that *C. albonotatus* is only subspecifically different from *C. macrurus typicus*, we may admit that intergradations take place between *C. albonotatus* and *C. atripennis*, and may also assume that the latter intergrades with *C. macrurus typicus*, though this is not very comprehensible geographically. Therefore, I believe, *C. atripennis* must be added to the *subspecies* of *C. macrurus*, but I, for my part, shall never allow it a quiet rest among the synonyms of the latter.

In studying these forms I find, further, that the intermediate forms between *C. albonotatus*, Tick., from North India, and *C. macrurus*, Horsf., *typicus*, from the Malay Peninsula, Burma, Assam, and the Eastern Himalayas, form a rather definite group of well-marked geographical limitation, such forms not being known from Java, Borneo, and

from further to the south and east. They may, therefore, with advantage be named *C. macrurus ambiguus*, subsp. nov. This is the form which has been described by Jerdon, Hume, and other Indian ornithologists, who were not acquainted with the typical form from the archipelago, as *C. macrurus*.

The specimens from Nepal and the lower parts of the Western Himalayas, which I described in Cat. B. xvi. p. 541, form also (though very variable) a peculiarly marked group, and do not occur, so far as I know, in other parts. They may therefore also receive a subspecific title, for which I propose *C. macrurus nipalensis* (from Hodgson's MS.).

In the 'Catalogue of Birds,' p. 594, I unfortunately adopted the name *Caprimulgus macrodipterus* of Afzelius, being under the impression that it had been published, as it had been quoted in several books, in the year 1794. My mistake was made chiefly because I misunderstood Sundevall's remark in his article in the 'Öfversigt af Kongl. Vetenskaps-Akad. Förhandlingar,' vi. p. 156-163. Now I have found out that I was wrong, and I have got an exact translation of that Swedish article, so that a mistake is impossible, and it becomes evident that the plate in question was printed, or at least drawn, but never published, nor any description of it. The name *C. macrodipterus* can therefore *not* be adopted, and the species must again be called *Macrodipteryx longipennis* (Shaw):

The genus *Cosmetornis* should again be united to *Macrodipteryx*, the second species of that genus therefore standing as *M. vexillarius* (Gould). The females of the two species cannot possibly be separated generically; in fact they also agree in colour and markings, and differ only in size. The sexual ornaments of a bird should not be taken as generic characters, for one should certainly be able to find out the right genus in which to place a species from a female, without knowing the male. Entomological examples show the danger of using male ornaments as generic characters, and the same rules that apply to insects should, in my opinion, also apply to birds, so far as the arrangement of groups, such as families and genera, are concerned. General agreement on these points, however, it is difficult to obtain, since the idea of

what should be regarded as proper generic characters is, and always has been, entirely different among ornithologists.

† NANNOCHORDEILES, gen. nov.

The little *Chordeiles pusillus* differs considerably from its larger allies in the form of the wing. In *Chordeiles* (sensu strictiore) the first primary is longest, the second a little shorter, the third very considerably shorter, and the further decrease great. In *Ch. pusillus* the first three primaries are of about equal length. This makes the wing much rounder and broader, and, no doubt, the flight of the bird must be very different from that of the long- and pointed-winged larger species. The scapulars reach to, at least, two-thirds of the length of the wing; the tarsus is quite unfeathered. These characters will, I believe, justify a generic separation of the little *Chordeiles*.

In the genus *Caprimulgus* (including *Antrostomus*) I was not able to make any satisfactory generic groups, because the characters that might have been useful for that purpose are not constant enough.

In the genus *Podargus* I had, after much hesitation, united *P. cuvieri* with *P. strigoides*, although all the Australian ornithologists had kept them separate, because I found all sorts of intermediate sizes and colours, and because I could not limit them geographically. I had hoped that Australian residents would give their opinions on the subject, or rather their experiences. It must be admitted that the material in the British and other European museums in which I had been able to study, with exact localities, dates, and sexes determined by competent men, is but scanty, and such localities as "N. S. Wales" and "Queensland" are often open to doubt, besides being rather vague. I hope local observers will find my course the right one; at any rate, with the material before me, I could not take any other.

In spite of my uniting all those forms from Australia, I had lately (Bull. B. O. U. vol. v. p. x) been obliged to describe a new *Podargus* from the islands east of New Guinea, which I found to be nearly constant in size and





to stand just in the middle between *P. papuensis* and *P. ocellatus*. These species, it must be admitted, do not differ in many respects, except in size, one being much more than twice as large as the other.

I will now conclude with some remarks on the genus *Egotheles*. It is remarkable how seldom one gets specimens of *Egotheles*, except the Australian *Æ. novæ-hollandiæ*. Several of the described species are only known at present from single specimens, and the majority from a few skins only. We know, as yet, next to nothing of the seasonal and sexual differences of these birds, nor of the limits of variation in the species. These, however, are wide in *Æ. novæ-hollandiæ*, and therefore the fear that some of the described species are not worthy of specific rank is not without foundation. From the large island of New Guinea we only know *Egotheles* from the Arfak region and from the mountains of British New Guinea, and these have received not less than ten specific names. Of these *Æ. insignis*, Salvad. (now figured on Plate VI.), is the most brilliantly coloured, being almost as fine as *Æ. crinifrons* from Ialmahera and Batjan. It is only known from a single specimen in the Genoa Museum, which has been most courteously lent me by Dr. Gestro. Of *Æ. albertisi* I know of two specimens—one, the type, in Genoa, and one, marked ♀, in the Tring Museum. Both are apparently young birds. Of *Æ. dubius*, Meyer, the type only, in Dresden, is known. It may or may not be different from *Æ. albertisi*, from which it seems to differ in colour only. *Æ. salvadorii*, Hartert, is represented in the British Museum, and three more specimens are now before me which were collected by Mr. Loria in the same place whence the type came. Another closely allied form has just been described by Salvadori as *Æ. rufescens*, from a female from Moroka, in British New Guinea. I quite agree with Salvadori that it is a distinct species; but it may possibly be Ramsay's *Æ. plumifera*, though there are characters given in the latter author's description which are not indicated in the type of *Æ. rufescens*, so that they cannot be united without further researches. *Æ. affinis*, Salvad., is also known from

a single female only, from Arfak. It is represented now on Plate VII., and I am again much obliged to Dr. Gestro for giving me the opportunity of figuring the type in 'The Ibis.' Then there are *Æ. bennetti*, Salvad., and *Æ. wallacei*, Gray, both known from a number of specimens, and lastly *Æ. plumifera*, Rams. In the original description this species was compared with *Æ. bennetti*, but it seems much more closely allied to *Æ. rufescens*, or less probably *Æ. salvadorii*. Salvadori has also described an *Æ. loriæ* (Ann. Mus. Civ. Genova, xxix. p. 564), which I kept separate in the 'Catalogue of Birds,' xvi. p. 650. Dr. Gestro has now lent me the type, and I am sorry to say I cannot distinguish it in any way from the darker specimens of *Æ. bennetti* in the British Museum, though in the original description it has only been compared with *Æ. wallacei*, which is, of course, different.

P.S. May 12th.—During my recent visit to Paris, Dr. Oustalet kindly showed me his series of *Collocalia germani*, described in Bull. Soc. Philom. Paris, 1876, p. 1–3, and I found them to be the same as the form named *C. merguiensis* (subspecies of *C. francica*) in the Cat. of Birds. Of course Oustalet's name has the priority by a long way. I also saw *Chaetura cochinchinensis* of Oustalet. It is a very small form of *Chaetura caudacuta nudipes*, having the tail square, and is not at all related to *C. gigantea*. Dr. Büttikofer has also kindly sent me a sketch of the tail of his *C. klaesii*, which is square. It is evidently the same bird. The species probably breeds somewhere in the north, and both the type-specimens were shot on migration.

XXXIV.—On the Skull, Sternum, and Shoulder-Girdle of *Æpyornis*. By CHAS. W. ANDREWS, B.Sc., F.G.S., Assistant in the British Museum (Nat. Hist.).

(Plates VIII. & IX.)

A SMALL collection of remains of the extinct birds of the genus *Æpyornis*, including portions of two skulls, two

imperfect mandibles, some coraco-scapulæ, a nearly perfect sternum, and some small bones which I regard as the rudimentary humeri, has recently been sent to England by Dr. Forsyth Major. All these specimens were obtained in Central Madagascar, and, although many of them leave much to be desired in the matter of completeness, a short description of them, with figures, may be welcome, since, except what can be gathered from the brief description of the skull, mandible, and shoulder-girdle of *Æ. mulleri* given by Milne-Edwards and Grandidier*, nothing is known of these important portions of the skeleton in any member of the genus. A somewhat more detailed account† by the same authors of the skull and skeleton of *Mullerornis* shows that it differs considerably from *Æpyornis*, and in many points approaches *Casuarius*. In some respects, however, *Æpyornis* also resembles *Casuarius*, a fact long ago pointed out by Milne-Edwards and Grandidier.

The Skull and Mandible (see Plate VIII.).

The collection includes two specimens of the cranial portion of the skull, both unfortunately somewhat imperfect, a large part of the united premaxillæ of another individual, and two imperfect mandibles. All these probably, the two crania certainly, belong to the same species, but what that species is cannot be determined. Dr. Major, on his labels, suggests that it may be *Æ. hildebrandti*, and very possibly he is right; but in view of the confusion that has arisen in the case of the Dinornithidæ, through the conjectural reference of isolated bones to the various species, it seems best to leave the specific name of these remains undetermined, until the discovery of associated sets of bones renders it possible to settle the question finally.

In the following account of the skull the terms employed

* "Observations sur les *Æpyornis* de Madagascar," *Comptes Rendus Acad. Sci.* t. cxviii. 1894, p. 122.

† "Sur des Ossements d'Oiseaux provenant des Terrains Récents de Madagascar," *Bull. Mus. Hist. Nat.* pt. i. (1895), p. 9.

by Prof. J. Parker in his paper on the Cranial Osteology of the Moas are used so far as possible.

As already stated by Milne-Edwards and Grandidier, the large occipital condyle, as in *Apteryx* and the Dinornithidæ, is strongly pedunculate; except that its upper surface is rather flattened, it is hemispherical in form, and in neither specimen is there any trace of a notochordal depression.

The *foramen magnum* (Plate VIII. fig. 2) is large and oval, its long (vertical) diameter measuring 17 mm., the short (horizontal) 12 mm. Its plane is somewhat inclined backward, but the upper margin only very slightly, if at all, overhangs the occipital condyle, owing to the great prominence of the latter. There is no trace of an occipital crest, but there is a very prominent supra-foraminal ridge, which is continued downwards to the inner angles of the paroccipital processes. Above the foramen the occipital surface slopes somewhat forwards; at first it is flattened, but above it passes by a gentle curve into the parietal region. The *lambdoidal ridges* are very feebly developed, if, indeed, the posterior may not be regarded as entirely wanting. The anterior, in its median portion, runs transversely in a straight line; laterally it turns downward, nearly joining the temporal ridge, and ventrally it becomes continuous with the outer border of the somewhat backwardly-directed paroccipital processes (*par.oc.*). These are very broad, and their evenly-curved ventral margin is about on a level with the bottom of the occipital condyle; their posterior surface is convex from above downward, while their anterior surface, forming the posterior wall of the tympanic cavity, is concave in the same direction.

The postorbital portion of the cranial roof (Plate VIII. figs. 1 & 3) is about equally convex from before backward and from side to side. Posteriorly it is narrowed by the encroachment of the deep temporal fossæ (*t.f.*), but in front of these it widens out and curves steeply downward, forming the large postorbital processes (*p.orb.pr.*). In the interorbital region the cranial roof is flattened and is somewhat narrowed. A most interesting point is the presence in the frontal region of numerous deep rounded pits (see Plate VIII. fig. 1). Of these

there are four main rows; the outer pair extend back on to the bases of the postorbital processes, while the inner terminate opposite the posterior margin of the orbit. In addition to these, there are a number of irregularly distributed depressions. The presence of these pits seems to indicate the former existence of a frontal crest of large feathers in the species to which these skulls belong, and it is a point worthy of note that, on the same grounds, Prof. Jeffery Parker has inferred the existence of a similar crest in certain species of *Moa**.

The *basi-temporal platform* (Pl. VIII. fig. 2) is very much more prominent than in any of the *Dinornithidæ*, its nearly vertical posterior surface being about as deep as broad, while in the New Zealand birds the depth is always much less than the breadth. In the other *Ratitæ*, except *Casuaris*, the basi-temporal platform is only slightly raised above the general level of the floor of the skull, and the only bird in which it is more prominent than in *Æpyornis* appears to be *Aptornis*. The vertical basi-occipital surface has its ventro-lateral angles produced into stout mamillar tuberosities (*m.t.*) (in the figure that on the left has been restored), between which its inferior border is concave: immediately beneath the occipital condyle there is a hemispherical depression, the *precondylar fossa* (*p.c.f.*).

The ventral surface of the platform is remarkable for its extreme shortness from front to back, its length from the base of the rostrum to the mamillar tuberosities being rather less than its width at those processes. One of the consequences of this shortening is that the bases of the large basi-pterygoid processes are separated from the mammillar tuberosities by a shallow groove only. This is the ventral prolongation of the Eustachian groove, which is short and nearly vertical, and, as in the *Dinornithidæ*, remains open in the adult, although for a short distance near its lower end its edges come very near together. The posterior wall of the Eustachian groove is united to the inner angle of the paroccipital process by a narrow bridge of bone; between

* "On the Presence of a Crest of Feathers in certain Species of *Moa*," Trans. New Zealand Institute, vol. xxv. (1892) p. 3.

this and the side of the basi-temporal platform there is a funnel-shaped depression, at the bottom of which a foramen, probably that transmitting the internal carotid (*car.for.*), opens. Immediately above, and somewhat to the inner side, of this is the *vagus foramen* (x.). In the middle line, between the bases of the basi-pterygoid processes, there is a circular foramen, which seems to penetrate into the brain-case; this opening is the *anterior basi-cranial fontanelle*, occasionally present in *Dinornis*.

In both specimens the rostrum and the ends of the basi-pterygoid processes are broken away.

The tympanic cavity is shallower than in the Dinornithidæ, owing mainly to the fact that the inner angle of the par-occipital process is less prominent; on the other hand, the greater width of this process makes the cavity wider than in the New Zealand bird. The margin forms an even curve, much as in *Dinornis*. On the roof of the tympanic cavity, immediately internal to the zygomatic process, is the articular facet for the quadrate; the form of this articulation, and the share in its composition taken by the various bones, are shown in fig. 7 of Plate VIII. It is more circular in outline than in the other Struthious birds, and is very deeply concave. The various foramina opening into the tympanic cavity are arranged almost exactly as in the Dinornithidæ. The anterior tympanic recess and the pretemporal wings are very large. On the left side in the specimen figured the *columella auris* is still in place.

The temporal fossa (*t.f.*, fig. 3) is very deep and narrow, and its anterior and posterior borders are nearly parallel. On the upper surface of the skull the fossæ are widely separated one from another, the interval between them being about equal to the width of the interorbital region of the frontals. There is a large, nearly flat, posterior temporal fossa (*post.t.f.*), bounded internally by the inferior tympanic ridge, which is not produced into a pre-tympanic process, and externally by the post-temporal ridge, which forms the antero-external margin of the zygomatic process. The squamosal does not form a prominence as in the Dinornithidæ, but has a nearly

flat outer surface. The zygomatic process (*zyg.*) is very long, and is directed downward and forward, and, at its lower end, somewhat outward.

Unfortunately, the whole of the interorbital region in front of the optic foramen is much broken, but, so far as can be seen, it resembles that of *Dinornis*, the olfactory chambers having extended far back. The arrangement of the optic and other foramina in its neighbourhood is shown in fig. 8 of Plate VIII. It will be seen that the oculomotor (III.) and orbito-nasal (v.) apertures lie in a line immediately behind the optic foramen (II.). Immediately below the oculomotor foramen is the opening, in one case divided into two by a bar of bone, which transmits the internal ophthalmic artery and sixth nerve (VI. & *a*): the foramen for the fourth nerve (IV.) is dorsal to the optic. Except that there is no distinct lacerate fossa, this arrangement is similar to that seen in some *Moa* skulls.

The whole of the rest of the skull is wanting, with the exception of the premaxillary region (fig. 4), and of this the anterior extremity is lost, so that the exact form of the beak cannot be determined. The maxillary and palatine processes together form on either side a thin plate of bone, with a slightly grooved alveolar border. The anchylosed facial processes, constituting a stout bar, rise rapidly from the body of the bone, which is hollowed out posteriorly by a very deep fossa, bounded by the bases of the facial and maxillary processes.

In the mandible (Plate VIII. figs. 5 & 6) the articular surface for the quadrate is very deep, but is proportionately smaller than in the other Ratites; large internal (*i.a.p.*) and posterior angular (*p.a.p.*) processes are present, the upper surface of the former bearing a pneumatic foramen; there is also a prominent inferior angular process (fig. 6, *inf.a.p.*). Looked at from above, the articular region closely resembles that of the mandible of *Casuaris*. The mandibular rami are very massive and straight; the dorsal edge bears a prominent coronoid process, in front of which it widens out, so that its anterior half forms a grooved

alveolar surface about 10 mm. wide, narrowing towards the anterior end. The outer surface of each mandibular ramus is deeply grooved for about its middle third.

The dimensions of the skull and mandible are :—

	mm.
Length of <i>basis cranii</i>	36
Width at paroccipital processes	76
Width at squamosal	76
Greatest width at temporal fossa	60
Least width between temporal ridges	60
Width at postorbital processes	86
Height of cranium (approx.)	65
Distance between optic foramina	9
Length of mandible (approx.)	170
Width of articular end	29

The incompleteness of the specimens here described renders detailed comparison with the skull of the other *Ratitæ* impossible at present, since many of the most important characters are to be found in the palatal and facial regions, which are entirely wanting in these fossils. Nevertheless, it will be seen that in several respects *Æpyornis* approaches the *Dinornithidæ* in the structure of its skull. Among the points of resemblance are the pedunculate occipital condyle, the prominent basi-temporal platform, the open Eustachian groove, the structure of the facet for the quadrate, and the presence of a frontal crest of large feathers (as in some of the *Dinornithidæ*).

The Sternum (Plate IX. figs. 1 & 2).

A nearly complete specimen of the sternum, in which only a portion of the antero-external region on the right side is wanting*, shows that this bone was truly “ratite,” and was of a very remarkable and characteristic shape. Its most striking peculiarity is its extreme shortness compared with its width, its length in the middle line being only about a fifth of its width at the antero-lateral processes. At first sight it may appear that this shortening is due to the breaking away of some of the thin posterior region, but

* This fragment has since been found, so that the sternum is now complete.

closer examination shows that this is almost certainly not so. In the first place, the two halves of the posterior border are symmetrical, which would hardly be the case if the outline was the result of accidental fractures. Moreover, for about 25 mm. in the middle line the hinder border forms a gently concave curve, with a sharp clean edge, clearly the natural margin of the bone; on either side of this the edge is truncate, and in life was evidently bordered with cartilage, the extent and form of which it is, of course, impossible to determine.

The anterior edge of the sternum is thin and sharp. Its middle portion, between the coracoid grooves, is deeply concave; on either side, where it forms the upper lip of these grooves, it is convex, and externally it passes into the base of the very prominent and stout antero-lateral processes (*ant.lat.pr.*). The coracoid grooves are about 60 mm. long, and are separated by an interval of 66 mm. The middle portion of their lower lip forms a very prominent plate of thin bone, about 14 mm. high and 25 wide.

The lateral border is formed in front by the antero-lateral processes, in the middle by a thickened area, bearing four facets for the articulation of the sternal ribs, while posteriorly it becomes a comparatively thin edge, which passes into the hinder border in the rounded postero-lateral angle. The first of the costal processes is the most prominent; it rises at the base of the antero-lateral process, above the level of which it lies. On its anterior surface there is a large pneumatic foramen. The articular surface is obliquely elongated, and slopes downward and backward. The next two processes are similar in form, and are separated from the first and from each other by deep pits. The fourth stands some distance behind the others, and its articular surface is nearly circular.

The form of the hinder border is shown in fig. 1, and the structure of its edges has already been referred to.

The body of the bone is for the greater part very thin, but in the middle line it is somewhat thickened, the visceral surface being raised in a broad transverse ridge, which dies away as it is traced towards the costal borders.

The dimensions (in millimetres) of the sternum are:—

	mm.
Length in middle line	47
Width between tips of antero-lateral processes	
about	235
Width between tips of postero-lateral processes	
about	280
Length of lateral borders (between end of antero- and postero-lateral processes)	125
Distance between inner end of coracoid grooves	66
Length of coracoid groove	60

It may be remarked that the right half of the specimen (left in the figure) has been much flattened, so that the measurements of the width, both at the anterior and posterior ends, as given above, are somewhat too great, and the same distortion is the cause of the want of symmetry seen in the figure.

Comparison of the sterna of *Struthio*, *Rhea*, *Dromæus*, and *Casuarus* with the fossil shows that they differ from it in almost every structural feature, as well as in the relative proportions of their length and breadth. In *Rhea*, however, the coracoids are separated from each other by a considerable interval, though a much smaller one than in *Æpyornis*, and the border between them is concave; in *Casuarus* and *Dromæus* there are four rib-facets.

The sterna of the New Zealand Ratitæ show a much greater resemblance to that of *Æpyornis*, although the various forms occurring among the Dinornithidæ are still very different, particularly in the straight or convex anterior border, the position of the pneumatic foramina, the absence or very rudimentary condition of the coracoid impressions, and the greater development of the xiphisternal region. On the other hand, the distance of the coracoid impressions from one another, and, in *Pachyornis*, the posterior divergence of the lateral borders and the great width in proportion to the length, are points of similarity.

It is in the sternum of *Apteryx*, however, as Milne-

Edwards and Grandidier have already stated*, that we find by far the closest resemblance to *Æpyornis*. The two agree in the deeply concave anterior border, the widely separated and similarly situated coracoid grooves, their great relative width, and the presence of four costal facets. In the posterior region the likeness is not so great, but in *Apteryx* this portion of the sternum is very variable in form. Usually there are a pair of lateral processes and a somewhat shorter median one, but the latter may be divided by a median notch (as in some of the *Dinornithidæ*), or may, occasionally, be entirely wanting, in which case the resemblance to the fossil is very great. This latter condition is shown in the figure of the sternum of *A. oweni* given in Meyer's 'Abbildungen von Vogel-Skeletten,' pl. 54. In this case the lack of the median process probably results from ossification not having extended into that portion of the metasternal cartilage; in *Æpyornis*, on the other hand, this cartilage appears never to have been developed, for, as above mentioned, the middle of the posterior edge of the sternum for about $2\frac{1}{2}$ cm. is thin and sharp, and clearly was not bordered by cartilage, although a fringe of that substance extended on either side along the rest of the hinder margin. If, therefore, as seems probable, the metasternal region is wanting, the sternum of *Æpyornis* consists of the two primitive costo-sternal elements only, and in this respect corresponds to an embryonic stage in the development of the sternum in the recent *Ratitæ*†.

The sternum of an embryo of *Apteryx australis* figured by Prof. Jeffery Parker on pl. xvi. fig. 218 of his memoir "On the Structure and Development of the *Apteryx*" (Phil. Trans. vol. 182 (1891) B) shows this condition, the metasternal region being still entirely absent; and if ossification had taken place at this stage without the further addition of cartilage, the resulting sternum would be almost exactly equivalent to

* "Observations sur les *Æpyornis* de Madagascar," Comptes Rendus Acad. Sci. vol. cxviii. (1894) p. 125.

† See Lindsay, "On the Avian Sternum," Proc. Zool. Soc. 1885, p. 711.

the present specimen. In this latter ossification probably took place from a pair of centres, the pleurostea (mesosterna), which gradually extended towards the middle line, where traces of their union are still visible (*s*, Pl. IX. fig. 1). The antero-lateral process, however, may, as in *Rhea*, have ossified from a second pair of centres (proostea).

From the foregoing description it will be gathered that in *Aepyornis* the sternum has undergone greater reduction than in perhaps any other bird, and that to some extent, in its similarity to the sternum of the New Zealand Ratitæ, it supports the conclusions derived from the cranium.

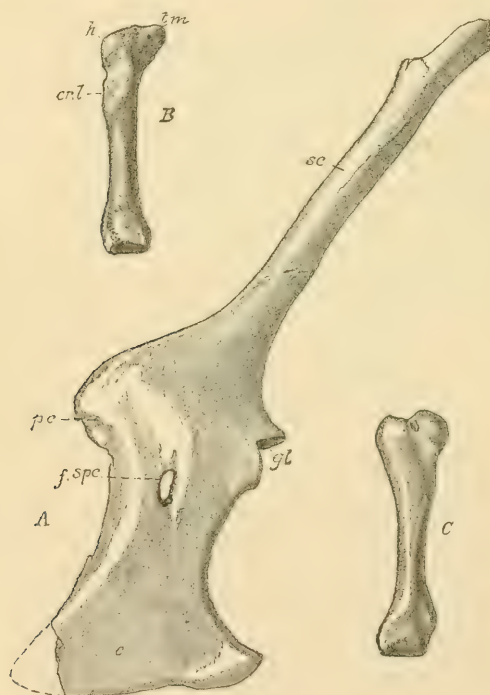


Fig. A, left coraco-scapula of *Aepyornis*; Figs. B & C, supposed humeri.
($\frac{1}{2}$ natural size.)

sc., scapula; *c.*, coracoid; *pc.*, precoracoid process; *f.spc.*, supra-coracoid foramen; *gl.*, glenoid cavity; *h.*, head; *t.m.*, *tuberculum mediale* (inner trochanter); *cr.l.*, *crista lateralis* (pectoral crest).

The Shoulder-Girdle.

The coraco-scapula (fig. A, p. 386) is typically *Struthious* in form. The scapula (*sc.*) is fused, and makes an obtuse angle with the broad coraco-precoracoid. This latter has a long sternal border, above which it is narrowed, both its inner and outer borders being concave. Near the middle of the narrowest part is the large supra-coracoid foramen (*f.sp.*); the bar of bone internal to this is probably a remnant of the middle portion of the reduced precoracoid, the upper end of which forms a prominent precoracoid process (*pc.*). The outer face of the combined bones is smooth, there being no trace either of the acro-coracoid process or of the coraco-scapular protuberance. The curved scapula (*sc.*) is long and slender; in the specimen figured the upper end is lost, but other examples show that it was flattened and slightly expanded. The coraco-scapular angle is about 140° . The glenoid cavity (*gl.*) is small, measuring 15 mm. in its long (vertical) axis, 11 mm. in the short; the coracoid and scapula take equal shares in its composition.

It will be seen that this coraco-scapula differs widely from that of *Struthio*, in which the precoracoid is a well-defined element; on the other hand, it is much less reduced than in the *Dinornithidæ*, in some of which, indeed, it is entirely wanting. In *Rhea* the coraco-scapula is also very different, but in *Casuarinus* and *Dromæus*, particularly the former, the similarity to the fossil is greater, a circumstance that gives support to Milne-Edwards and Grandidier's opinion that *Casuarinus* is a near ally of *Æpyornis*. *Apteryx* is also similar in some respects, but the position of the supra-coracoid foramen is different.

The dimensions of coraco-scapula are :—

	mm.
Length of sternal border (approx.)	65
Distance from middle of glenoid cavity to lateral sternal angle	60
Width of opposite supra-coracoid foramen	28

Humerus.

In the collection there are several small bones which I believe are rudimentary humeri of *Æpyornis*, though some of the specimens are so different from other avian humeri that it is by no means certain that this interpretation is correct. In the case of the bone shown in fig. B (p. 386), however, there seems to be no doubt that it is a much reduced humerus of a bird, presumably one of the *Æpyornithidæ*; the length of this specimen is 63 mm. The upper end of the bone is modified in a manner similar to that seen in *Aptornis*, the head being placed very obliquely, and the inner trochanter (*tuberculum mediale*, *t.m.*), which is extremely prominent, rising above it; the pectoral crest (*cr.l.*) is reduced to a slightly projecting rugose surface. The lower end is somewhat similar to that of the humerus of *Casuaris*, but is still further reduced, the radial and ulnar trochleæ uniting completely to form a single articular surface. The nature of the specimen shown in fig. C (p. 386) is more doubtful, yet it so closely resembles the last in the form of its lower portion that I am led to believe that it is an avian humerus also; its upper end is, however, very different and peculiar. The head is large and nearly globular; it rises above the massive inner trochanter (*tuberculum mediale*), and is separated from it by a well-marked groove (*incisura collaris*). Here, also, the pectoral crest is reduced to a mere rugose prominence. If these two bones are in fact humeri of species of the *Æpyornithidæ*, they probably belong to different genera, a question which it is to be hoped will be settled by the discovery of complete skeletons of these interesting birds.

EXPLANATION OF THE PLATES.

PLATE VIII.

Skull and Mandible of Æpyornis.

- Fig. 1. Cranium from above.
2. Cranium from behind.
3. Cranium from side.
4. Premaxillæ.
5. Imperfect mandible from above.

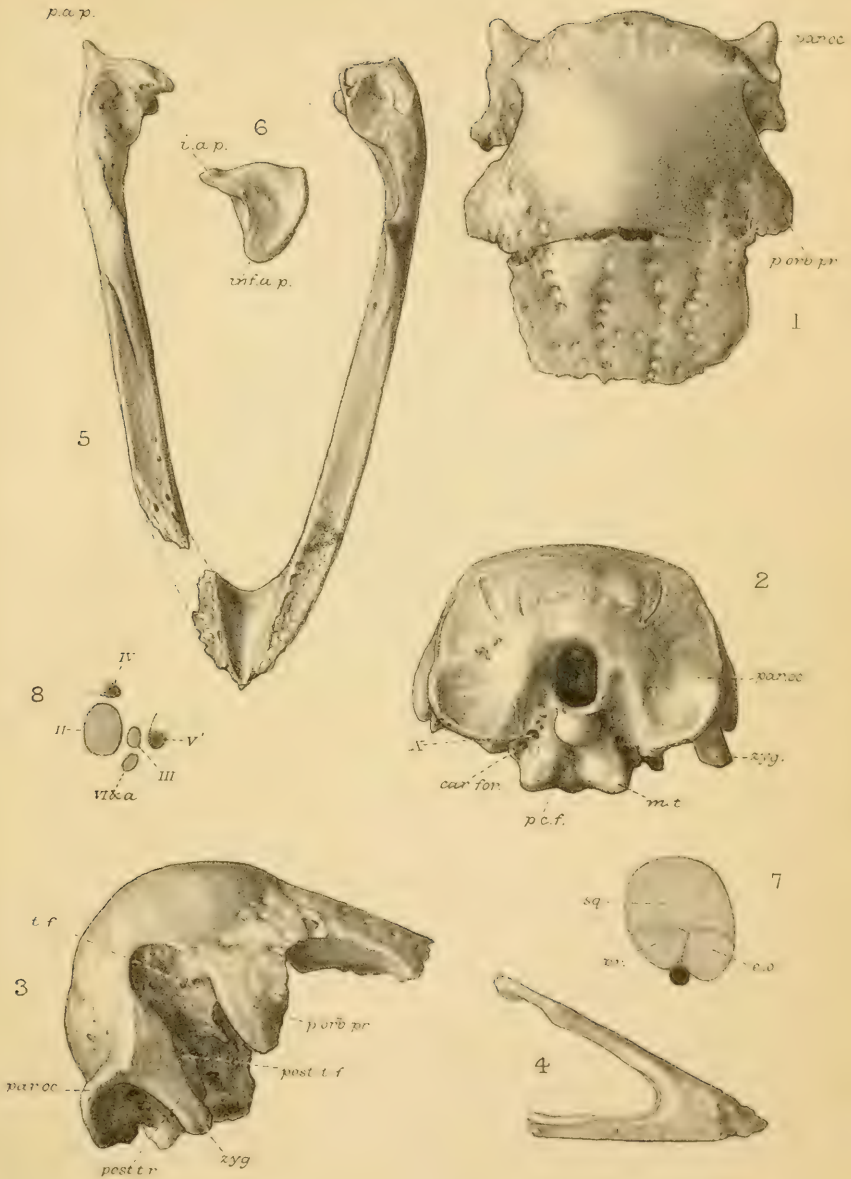


Fig 1.

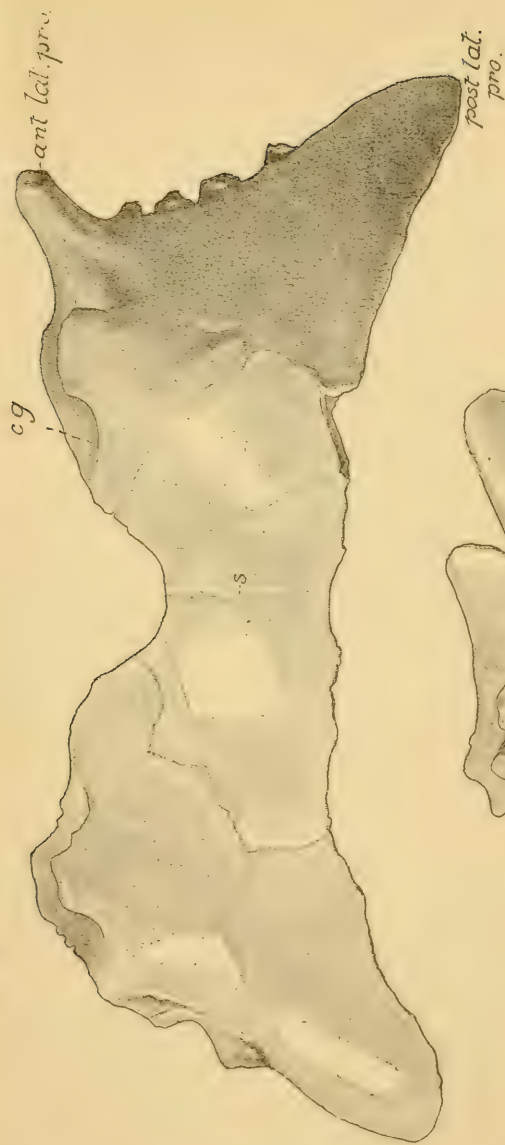


Fig. 2.

Fig. 6. Posterior view of angular region of mandible.

(The above figures are one half natural size.)

7. Diagram showing the structure of articular facet for quadrate.

8. Diagram showing arrangement of foramina in orbit.

Lettering for all the Figures.

<i>car.for.</i>	carotid foramen.
<i>e.o.</i>	exoccipital.
<i>i.a.p.</i>	internal angular process.
<i>inf.a.p.</i>	inferior angular process.
<i>m.t.</i>	mamillar tuberosity.
<i>p.a.p.</i>	posterior angular process.
<i>p.orb.pr.</i>	postorbital process.
<i>p.c.f.</i>	precondylar fossa.
<i>par.oc.</i>	paroccipital process.
<i>post.t.f.</i>	posterior temporal fossa.
<i>post.t.r.</i>	post-temporal ridge.
<i>pr.</i>	pro-otic.
<i>sq.</i>	squamosal.
<i>t.f.</i>	temporal fossa.
<i>zyg.</i>	zygomatic process.

The Roman numerals in fig. 8 refer to the numbers of the cranial nerves which pass through the foramina indicated.

PLATE IX.

Sternum of Æpyornis.

Fig. 1 from below ; Fig. 2 from side. ($\frac{1}{2}$ nat. size.)

<i>ant.lat.pro.</i>	antero-lateral process.
<i>post.lat.pro.</i>	postero-lateral process.
<i>c.g.</i>	coracoid groove.
<i>s.</i>	trace of suture between the two halves of the sternum.

XXXV.—*Proceedings at the Annual Meeting of the British Ornithologists' Union, held April 22nd, 1896.*

THE Annual General Meeting of the British Ornithologists' Union was held at the rooms of the Zoological Society of London, 3 Hanover Square (by permission of the Council of that Society), on Wednesday, the 22nd of April, at 6 P.M. In the absence of the President, Mr. P. L. SCLATER, M.A., Ph.D., F.R.S., was requested to take the Chair. The Minutes of the last Annual Meeting having been read and confirmed, the Report of the Committee was read.

It stated that two Ordinary Members (F. A. Knight and Leopold Field) had withdrawn, and that four Members (Lieut. H. E. Barnes, H. Seebohm, H. T. Wharton, and Lieut.-Col. Drummond-Hay) had been lost by death since the last Anniversary.

The number of the Members of the Union at that time was 293, consisting of 263 Ordinary, 1 Extraordinary, 10 Honorary, and 19 Foreign Members.

There were 29 Candidates for the Ordinary Membership, and one for the Foreign Membership, to be balloted for at the present Meeting.

The General Index for the last three series of 'The Ibis,' agreed to be undertaken at the last Meeting, was in progress, and it was hoped that it would be ready for distribution early in 1897.

The accounts for the year 1895 were presented by the Secretary, and approved by the Meeting.

The following Ordinary Members were balloted for and declared to be duly elected:—

Boyd Alexander, Swifts Place, Cranbrook, Kent.

Charles F. Archibald, Rusland Hall, Ulverston.

Robert Blakeney, R.E., Aldershot Camp.

W. C. J. Ruskin Butterfield, Wilsden, Bradford; and
10 Stanhope Place, St. Leonard's-on-Sea.

Francis J. Cade, The College, Cheltenham.

James S. Cameron, Royal Sussex Regiment.

Capt. Alexander H. Cowie, R.E., Stanhope Lines,
Aldershot.

Francis C. Crawford, 4 Raymond Buildings, Gray's Inn,
London, W.C.

Samuel Rutherford Crockett, Bank House, Penicuik,
Midlothian.

Bertram W. Y. Danford, R.E., Chatham.

Count Ettore A. Degli Oddi, Padua.

James B. Dobbie, F.Z.S., 3a Pitt Street, Edinburgh.

Dr. Frederic D. Drewitt, 2 Manchester Square, W.

Lt.-Col. W. H. M. Duthie, Row, Doune, Perthshire.

Robert Gurney, Sprowston Hall, Norwich.

John C. Hartland, The Bluff, Yokohama, Japan.

William Jesse, La Martinière College, Lucknow, Oudh.

J. A. Luttmann-Johnson, M.A., 101 Mount Street, W.

Oswin A. J. Lee, 58 Manor Place, Edinburgh.

Percy Lubbock, 72 Cadogan Gardens, London, S.W.

Sir Herbert E. Maxwell, Bt., M.P., 49 Lennox Gardens,
London, S.W.

Arnold Pike, 5 Rider Street, St. James's, London, S.W.

Hugh L. Popham, New Oxford and Cambridge Club,
Pall Mall, London, S.W.

Capt. J. Middleton Rogers, 1st (Royal) Dragoons.

Major George Rippon, 7th Burma Battalion, Meiktila,
Burma.

The Earl Sondes, Lees Court, Faversham.

William F. Urwick, 27 Bramham Gardens, London, S.W.

Watkin Watkins, Shotton Hall, Shrewsbury.

Lionel A. Williams, Llangurran, Salisbury; and Isth-
mian Club, Piccadilly, London, W.

Heer Herluf Winge, University Zoological Museum,
Copenhagen, was balloted for and elected a Foreign Member
of the Union.

The Rt. Hon. Lord Lilford and Mr. F. DuCane Godman
were re-elected President and Secretary of the Union, and
Mr. Osbert Salvin, M.A., F.R.S., was elected into the
Committee in the place of Dr. W. T. Blanford, F.R.S.,
who retired by rotation.

On the motion of Mr. SCLATER, it was agreed that the
Committee be empowered, at their discretion, to call a second
General Meeting of the B. O. U. some time in October or
November, every year.

Mr. SCLATER having explained his plans for a new General
Synopsis of Birds, it was agreed that a Committee, consisting
of Dr. Blanford, Mr. Godman, Mr. Salvin, Mr. Howard
Saunders, and Mr. Selater, should be appointed to consider
it, and to report on it to the General Meeting of the B. O. U.
in 1897.

After a vote of thanks to the Chairman, the Meeting
adjourned.

The Annual Dinner, subsequently held at Limmer's Hotel,
was attended by 28 Members and guests.

XXXVI.—*Bulletin of the British Ornithologists' Club.*

Nos. XXXIV.—XXXVI.

No. XXXIV. (March 31st, 1896.)

THE Thirty-third meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 18th of March, 1896.

Chairman : P. L. SCLATER, F.R.S.

Members present :—G. BARRETT-HAMILTON, E. BIDWELL, Col. C. T. BINGHAM, J. H. BONHOTE, W. E. DE WINTON, A. DOWSETT, H. E. DRESSER, H. J. ELWES, A. H. EVANS, J. GERRARD, W. GRAHAM, W. R. OGILVIE GRANT, ERNST HARTERT, J. E. HARTING, P. M. C. KERMODE, Major A. P. LOYD, A. McL. MARSHALL, JAS. McL. MARSHALL, E. NEALE, R. NESHAM, HEATLEY NOBLE, F. MENTEITH OGILVIE, C. E. PEARSON, H. J. PEARSON, F. PENROSE, R. H. READ, Capt. SAVILE G. REID, Hon. CHAS. ROTHSCHILD, Hon. WALTER ROTHSCHILD, HOWARD SAUNDERS (*Treasurer*), R. BOWDLER SHARPE (*Editor*), CHARLES STONHAM, E. PRIAULX TENNANT, Major HORACE TERRY, H. M. WALLIS, C. B. WHARTON, JOHNSON WILKINSON, C. A. WRIGHT, Col. J. W. YERBURY, JOHN YOUNG.

Dining Visitors : J. W. CASTLE, W. E. CHAPMAN, Capt. A. COWIE, D. G. ELLIOT, GEORGE EVANS, C. H. FREEMAN, W. E. GRAHAM, H. OGILVIE GRANT, E. S. GROGAN, DONALDSON GUNN, JONATHAN HUTCHINSON, F.R.S., Col. F. W. JAMES, HERBERT MASSEY, HENRY MUNT, JOHN A. NORTON, M.D., GEO. PARKIN, T. PERKINS, H. STEVENS, W. MURRAY TUKE, W. F. URWICK, Dr. O. WOOD.

A number of visitors also attended the Meeting at 8.30.

Dr. BOWDLER SHARPE exhibited one of the volumes of original paintings of Woodpeckers, executed by the late Mr. Edward Hargitt. The total number of coloured figures was 1368, and on this stupendous task Mr. Hargitt had been engaged for more than fourteen years. The pictures,—said Dr. Sharpe,—as will be seen by the volume exhibited, repre-

sent the males, females, and young birds, as well as all the intermediate plumages and variations, which Mr. Hargitt had been able to draw from the specimens in his own collection and those in the public museums and private collections of the world. Considering that for many years he had suffered from indifferent health, and was engaged throughout the time on his own professional work, it was really a wonderful example of human energy to have produced such a series of beautiful paintings of Woodpeckers. Nearly 100 typical specimens were illustrated in the series, and many of them were of great interest, as not having been figured in any public work.

The letterpress, which had been entirely written out by Miss Hargitt, contained 1489 original descriptions, all of them carefully copied from the works in which they had appeared. The work, as completed, formed 14 stout 8vo volumes.

Dr. Sharpe had been carefully through the collection of Woodpeckers left by his late friend and he found that this collection was one of very great importance, containing 3538 specimens, representing 289 species, with 22 types.

The collection contained examples of several species not in the British Museum nor in any other collection, and there could be no doubt that in Mr. Hargitt's series would be found the material for a complete Monograph of the Picidæ, which could be rendered still more perfect by a study of the fourteen volumes of paintings of Woodpeckers executed by Mr. Hargitt. These volumes also contained a number of original observations on and corrections to Mr. Hargitt's work in the 'Catalogue of Birds.' In conclusion, Dr. Sharpe expressed a hope that this beautiful collection would find a resting-place in some public or private museum, where it would be fully appreciated, so that the original work of its late possessor would receive the acknowledgment which so many years of patient labour demanded.

Mr. SCLATER stated that he had been informed by Capt. S. Pasfield Oliver that the latter was about to publish a translation of the Journal of "Le Sieur D. B.," from a

copy of this rare volume in the possession of Prof. Newton, at Cambridge. Mr. Selater exhibited the Zoological Society's MS. copy of this book, which was formerly in possession of the late Charles Telfair, C.M.Z.S. The work was most interesting to ornithologists as containing an account by an eye-witness in 1671 of the plumage and habits of the Solitaire or Dodo of Rodriguez. It was now known that the name of the author of the volume was Du Bois, and that it was published in Paris in 1674. (*Cf.* Newton, Trans. Zool. Soc. vi. p. 374.)

Mr. E. BIDWELL invited the members to the Upper Hall, where an exhibition of Cuckoos' eggs and those of the foster-parents had been prepared; but before the adjournment for that purpose, he made a few remarks as to the scope of the exhibition. He also drew attention to the important difference in the weight of the Cuckoo's egg when compared with that of the majority of those of their foster-parents. By their much heavier weight the eggs of the Cuckoo could nearly always be distinguished. 150 eggs in his own collection, measured and weighed by him, gave the following results:—

Longest egg	24.50 millimètres.
Shortest egg	19.50 „
Broadest egg ...	18.75 „
Narrowest egg ...	14.50 „
Largest egg	23.50 × 18.75 millimètres.
Smallest egg ...	19.50 × 14.50 „
Heaviest egg ...	312 milligrammes.
Next heaviest egg	279 „
Lightest egg ...	141 „
Next lightest egg	147 „

The Members of the B. O. C. who exhibited specimens of eggs were as follows:—

	Cuckoos'.	Fosterers'.
E. BIDWELL	158	49
P. CROWLEY	71	37

	Cuckoos'.	Fosterers'.
H. E. DRESSER	17	13
E. A. S. ELLIOT	9	6
W. GRAHAM	7	5
J. A. HARVIE-BROWN	3	1
H. J. PEARSON	12	2
F. PENROSE	19	11
ROBERT H. READ	36	25
SAVILE G. REID	46	29
C. ROTHSCHILD	3	2
W. ROTHSCHILD	99	24
C. STONHAM	16	10

The following gentlemen, non-members of the B. O. C., had kindly sent :—

	Cuckoos'.	Fosterers'.
W. M. CROWFOOT	22	13
H. MASSEY	275	50
J. A. NORTON	126	30

The total number of eggs of the Cuckoo exhibited was 919, and the accompanying clutches of eggs represented 76 species of foster-parents.

Mr. E. HARTERT, at Mr. Bidwell's request, had prepared a few notes on the recent observations of Dr. E. REY, and read the following remarks :—

“The majority of ornithologists had been of opinion that *Cuculus canorus* lays only a small number of eggs, *i. e.* 5 to 7 or so, and that a number of days (a week or so) passes between the laying of one egg and its follower. The work of Dr. E. Rey ‘*Altes und neues aus dem Haushalte des Kuckuks, 1892,*’ supposing his observations to be correct, exploded these theories entirely. Dr. Rey had come to many definite conclusions, of which the following were the most important ones :—

- “1. The eggs of *Cuculus canorus* vary more in colour and markings than those of any other bird.

- "2. The most important characters of the eggs of *Cuculus canorus* are their form, the weight of their shells, and above all their thickness and hardness.
- "3. The majority of the eggs of *Cuculus canorus* resemble in colour and markings the type of one of our common Passerine Birds ; while some show a kind of mixed type, and some do not exactly resemble any known eggs.
- "4. The eggs laid in the nests of *Ruticilla phœnicurus* and *Fringilla montifringilla* are nearly always like those of the nest-owners in colour and markings (57 out of 67 in those of the former, and all in those of the latter). Imitations are also common in nests of *Sylvia cinerea*, *Sylvia hortensis*, *Acrocephalus streperus*, and *A. phragmitis*, while they are rare in others, and have never yet been found in nests of *Troglodytes parvulus*, *Accentor modularis*, and the different *Phylloscopi*. In most countries it may be said that there are many more Cuckoos' eggs which do *not* imitate those of other birds than those which are successful imitations.
- "5. Most Cuckoos are in the habit of placing their eggs in nests of one species of bird, and take to other nests only if they cannot find their habitual nests.
- "6. They use, as a rule, one and the same district (mostly very limited) for depositing their eggs year after year.
- "7. *Neither the ovary nor the development of the eggs of the Cuckoos differ in any way from those of other birds.*
- "8. *The female Cuckoo lays about 20 eggs every year, and these are laid on alternate days.*
- "9. Each female Cuckoo lays similar eggs during its life.
- "10. Each female lays only one egg in one nest. If more than one be found they invariably belong to different females.
- "11. The time when the females lay varies greatly.
- "12. The female removes, in most cases (but not always), some of the eggs of the nest-owners."

After some remarks by several of the members, a hearty vote of thanks to Mr. BIDWELL for the trouble he had taken in organizing the present exhibition was proposed by Mr. Howard Saunders, and carried by acclamation.

The following list, prepared by Mr. BIDWELL, was laid before the Meeting :—

LIST OF
WESTERN PALÆARCTIC BIRDS
IN THE NESTS OF WHICH
CUCKOOS' EGGS HAVE BEEN FOUND.

[The figures refer to the number of specimens of Cuckoos' eggs of each species exhibited on this occasion.]

1	MISTLE-THRUSH.	<i>Turdus viscivorus</i> , Linn.
1	SONG-THRUSH.	<i>Turdus musicus</i> , Linn.
	FIELDFARE.	<i>Turdus pilaris</i> , Linn.
2	BLACKBIRD.	<i>Turdus merula</i> , Linn.
2	RING-OUZEL.	<i>Turdus torquatus</i> , Linn.
	ROCK-THRUSH.	<i>Monticola saxatilis</i> (Linn.).
8	WHEATEAR.	<i>Saxicola ænanthe</i> (Linn.).
1	ISABELLINE WHEATEAR.	<i>Saxicola isabellina</i> , Rüppell.
1	BLACK-THROATED WHEATEAR.	<i>Saxicola stapazina</i> , Vieillot.
	EASTERN BLACK-THROATED CHAT.	<i>Saxicola melanoleuca</i> (Göld.).
	EARED WHEATEAR.	<i>Saxicola albicollis</i> (Vieillot).
1	EASTERN PIED WHEATEAR.	<i>Saxicola morio</i> , Ehrenb.
9	WHINCHAT.	<i>Pratincola rubetra</i> (Linn.).
7	STONECHAT.	<i>Pratincola rubicola</i> (Linn.).
	WHITE-TAILED STONECHAT.	<i>Pratincola hemprichi</i> (Ehrenb.).
24	REDSTART.	<i>Ruticilla phænicuris</i> (Linn.).
1	BLACK REDSTART.	<i>Ruticilla titys</i> (Scop.).
1	BLUE-THROAT.	<i>Cyanecula suecica</i> (Linn.).
	WHITE-SPOTTED BLUE-THROAT.	<i>Cyanecula leucoicyanea</i> , Brehm.
65	REDBREAST.	<i>Erithacus rubecula</i> (Linn.).
2	NIGHTINGALE.	<i>Daulias lusciniæ</i> (Linn.).

	THRUSH-NIGHTINGALE.	<i>Daulias philomela</i> (Bechst.).
38	WHITETHROAT.	<i>Sylvia cinerea</i> , Bechst.
12	LESSER WHITETHROAT.	<i>Sylvia curruca</i> (Linn.).
	BLACK-HEADED WARBLER.	<i>Sylvia melanocephala</i> (Gm.).
3	ORPHEAN WARBLER.	<i>Sylvia orphea</i> , Temm.
33	BLACKCAP.	<i>Sylvia atricapilla</i> (Linn.).
47	GARDEN-WARBLER.	<i>Sylvia hortensis</i> , Bechst.
2	SUBALPINE WARBLER.	<i>Sylvia subalpina</i> , Bechst.
	SPECTACLED WARBLER.	<i>Sylvia conspicillata</i> , Marm.
13	BARRED WARBLER.	<i>Sylvia nisoria</i> (Bechst.).
2	DARTFORD WARBLER.	<i>Sylvia undata</i> (Bodd.).
1	GOLDEN-CRESTED WREN.	<i>Regulus cristatus</i> , K. L. Koch.
1	FIRE-CRESTED WREN.	<i>Regulus ignicapillus</i> (C. L. Brehm).
10	CHIFFCHAFF.	<i>Phylloscopus rufus</i> (Bechst.).
10	WILLOW-WREN.	<i>Phylloscopus trochilus</i> (Linn.).
	BONELLI'S WARBLER.	<i>Phylloscopus bonellii</i> (Vieill.).
4	WOOD-WREN.	<i>Phylloscopus sibilatrix</i> (Bechst.).
	GREY-TAILED WARBLER.	<i>Aëdon familiaris</i> (Ménét.).
4	ICTERINE WARBLER.	<i>Hypolais icterina</i> (Vieillot).
	MELODIOUS WARBLER.	<i>Hypolais polyglotta</i> (Vieillot).
1	BOOTED WARBLER.	<i>Hypolais caligata</i> (Licht.).
62	REED-WARBLER.	<i>Acrocephalus streperus</i> (Vieillot).
35	MARSH-WARBLER.	<i>Acrocephalus palustris</i> (Bechst.).
7	GREAT REED-WARBLER.	<i>Acrocephalus turdoides</i> (Meyer).
41	SEDGE-WARBLER.	<i>Acrocephalus phragmitis</i> (Bechst.).
3	AQUATIC WARBLER.	<i>Acrocephalus aquaticus</i> (J. F. Gmelin).
	PADDY-FIELD WARBLER.	<i>Acrocephalus agricola</i> (Jerdon).
7	GRASSHOPPER WARBLER.	<i>Locustella naevia</i> (Bodd.).
2	RIVER-WARBLER.	<i>Locustella fluviatilis</i> (M. & W.).
	CETTI'S WARBLER.	<i>Potamodius cetti</i> (Marm.).
74	HEDGE-SPARROW.	<i>Accentor modularis</i> (Linn.).
	ALPINE ACCENTOR.	<i>Accentor collaris</i> (Scop.).
	DIPPER.	<i>Cinclus aquaticus</i> , Bechst.
1	GREAT TITMOUSE.	<i>Parus major</i> , Linn.
23	WREN.	<i>Troglodytes parvulus</i> , K. L. Koch.
2	TREE-CREEPER.	<i>Certhia familiaris</i> , Linn.
34	PIED WAGTAIL.	<i>Motacilla lugubris</i> , Temm.
32	WHITE WAGTAIL.	<i>Motacilla alba</i> , Linn.

4 GREY WAGTAIL.	<i>Motacilla melanope</i> , Pallas.
16 BLUE-HEADED WAGTAIL.	<i>Motacilla flava</i> , Linn.
3 BLACK-HEADED YELLOW WAGTAIL.	<i>Motacilla viridis</i> , Gmelin.
12 YELLOW WAGTAIL.	<i>Motacilla raii</i> (Bonaparte).
33 TREE-PIPIT.	<i>Anthus trivialis</i> (Linn.).
49 MEADOW-PIPIT.	<i>Anthus pratensis</i> (Linn.).
RED-THROATED PIPIT.	<i>Anthus cervinus</i> (Pallas).
2 TAWNY PIPIT.	<i>Anthus campestris</i> (Linn.).
RICHARD'S PIPIT.	<i>Anthus richardi</i> , Vieillot.
WATER-PIPIT.	<i>Anthus spipoletta</i> (Linn.).
2 ROCK-PIPIT.	<i>Anthus obscurus</i> (Latham).
GOLDEN ORIOLE.	<i>Oriolus galbula</i> , Linn.
GREAT GREY SHRIKE.	<i>Lanius excubitor</i> , Linn.
1 LESSER GREY SHRIKE.	<i>Lanius minor</i> , J. F. Gmelin.
ISABELLINE SHRIKE.	<i>Lanius isabellinus</i> , Ehrenb.
25 RED-BACKED SHRIKE.	<i>Lanius collurio</i> , Linn.
5 WOODCHAT.	<i>Lanius pomeranus</i> , Sparman.
12 SPOTTED FLYCATCHER.	<i>Muscicapa grisola</i> , Linn.
1 PIED FLYCATCHER.	<i>Muscicapa atricapilla</i> , Linn.
2 SWALLOW.	<i>Hirundo rustica</i> , Linn.
MARTIN.	<i>Chelidon urbica</i> (Linn.).
14 GREENFINCH.	<i>Ligurinus chloris</i> (Linn.).
HAWFINCH.	<i>Coccothraustes vulgaris</i> , Pallas.
GOLDFINCH.	<i>Carduelis elegans</i> , Stephens.
1 SERIN.	<i>Serinus hortulanus</i> , K. L. Koch.
3 HOUSE-SPARROW.	<i>Passer domesticus</i> (Linn.).
2 TREE-SPARROW.	<i>Passer montanus</i> (Linn.).
11 CHAFFINCH.	<i>Fringilla cœlebs</i> , Linn.
1 BRAMBLING.	<i>Fringilla montifringilla</i> , Linn.
SNOWFINCH.	<i>Montifringilla nivalis</i> (Linn.).
15 LINNET.	<i>Acanthis cannabina</i> (Linn.).
MEALY REDPOLE.	<i>Acanthis linaria</i> (Linn.).
LESSER REDPOLE.	<i>Acanthis rufescens</i> (Vieillot).
7 TWITE.	<i>Acanthis flavirostris</i> (Linn.).
3 BULLFINCH.	<i>Pyrrhula europæa</i> , Vieillot.
NORTHERN BULLFINCH.	<i>Pyrrhula major</i> , Brehm.
1 BLACK-HEADED BUNTING.	<i>Emberiza melanocephala</i> , Scopoli.
2 CORN-BUNTING.	<i>Emberiza miliaria</i> , Linn.
23 YELLOW BUNTING.	<i>Emberiza citrinella</i> , Linn.

1	MEADOW-BUNTING.	<i>Emberiza cia</i> , Linn.
2	CIRL BUNTING.	<i>Emberiza cirrus</i> , Linn.
	YELLOW-BREASTED BUNTING.	<i>Emberiza aureola</i> , Pallas.
2	ORTOLAN.	<i>Emberiza hortulana</i> , Linn.
16	REED-BUNTING.	<i>Emberiza schæniclus</i> , Linn.
	LAPLAND BUNTING.	<i>Calcarius lapponicus</i> (Linn.).
	STARLING.	<i>Sturnus vulgaris</i> , Linn.
	JAY.	<i>Garrulus glandarius</i> (Linn.).
	MAGPIE.	<i>Pica rustica</i> (Scopoli).
	JACKDAW.	<i>Corvus monedula</i> , Linn.
7	SKY-LARK.	<i>Alauda arvensis</i> , Linn.
2	WOOD-LARK.	<i>Alauda arborea</i> , Linn.
2	CRESTED LARK.	<i>Alauda cristata</i> , Linn.
	SHORT-TOED LARK.	<i>Alauda brachydactyla</i> , Leisler.
	WHITE-WINGED LARK.	<i>Alauda sibirica</i> , J. F. Gmelin.
	DESERT-LARK.	<i>Ammomanes deserti</i> (Licht.).
	GREEN WOODPECKER.	<i>Gecinns viridis</i> (Linn.).
	RING-DOVE.	<i>Columba palumbus</i> , Linn.
	STOCK-DOVE.	<i>Columba ænas</i> , Linn.
	TURTLE-DOVE.	<i>Turtur communis</i> , Selby.
	LITTLE GREBE.	<i>Podiceps fluviatilis</i> (Tunstall).

No. XXXV. (April 29th, 1896.)

THE thirty-fourth meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 15th of April, 1896.

Chairman : PHILIP CROWLEY.

Members present :—E. BIDWELL, W. CHAMBERLAIN, STEPHENSON R. CLARKE, W. R. OGILVIE GRANT, E. HARTERT, Major A. P. LOYD, J. G. MILLAIS, R. NESHAM, HEATLEY NOBLE, H. J. PEARSON, T. DIGBY PIGOTT, C.B., Hon. WALTER ROTHSCHILD, Hon. N. CHARLES ROTHSCHILD, HOWARD SAUNDERS (*Treasurer*), R. BOWDLER SHARPE (*Editor*), H. M. WALLIS, JOHNSON WILKINSON, C. A. WRIGHT, JOHN YOUNG.

Visitors: BOYD ALEXANDER, A. CHOLMONDELEY, BERTRAM DANFORD, R.E., N. H. JOY, C. M. DIGBY PIGOTT, H. STEVENS.

— Mr. HOWARD SAUNDERS exhibited a specimen of *Oceanodroma cryptoleucura* from the collection of Mr. Boyd Alexander. The bird in question was picked up dead on the beach at Littlestone, in Kent, on the 5th of December, 1895, and was seen in the flesh by Mr. Alexander. This was the first instance of the occurrence of the species in Great Britain.

Dr. BOWDLER SHARPE exhibited a specimen of the Icterine Warbler (*Hypolais icterina*), obtained near Wells, in Norfolk, by Mr. N. H. JOY.

Mr. WALTER CHAMBERLAIN exhibited photographs of some interesting birds which he had living in confinement, one of them being an Australian Crane, which had walked with a wooden leg for the past few years. He also showed some interesting examples of radiography taken by himself.

The Hon. WALTER ROTHSCHILD exhibited specimens of his new species, *Astrapia splendidissima*, and of the three known species of *Amblyornis*.

Mr. E. BIDWELL exhibited, by the kind permission of Mr. Henry Stevens, an egg of the Great Auk (*Alca impennis*). This egg had been purchased on the 23rd of May, 1841, from F. Schultz, of Dresden, by Hugh Reid, of Doncaster, who sold it in the same year to the late Mr. James Hack Tuke, of Hitchin, in whose collection it had remained up to the present time.

Mr. ERNST HARTERT pointed out the differences between the Masked Grosbeak of Japan (*Eophona personata*) and the form found in Amur-land, and exhibited specimens of both races. He proposed to call the Siberian form

EOPHONA PERSONATA MAGNIROSTRIS, subsp. n.

Similis *E. personatæ*, ex insulis Japonicis, sed rostro multo majore (maris culm. 29 mm. nec 22), scapularibus uropygioque grisescentioribus distinguenda.

Dr. BOWDLER SHARPE made some remarks on recent papers by Dr. J. A. Allen and Mr. Frank M. Chapman on the changes of colour in the plumage of birds without moult. Dr. Allen especially disagreed with the conclusions put forward by the late Edward Blyth and other English and German naturalists. As regarded the points in which Dr. Allen differed from the conclusions of Dr. Sharpe, the latter reaffirmed his conviction on the subject, and could not endorse Dr. Allen's views.

A discussion followed, in which the Hon. WALTER ROTHSCHILD, Mr. HOWARD SAUNDERS, Mr. JOHN YOUNG, Mr. HARTERT, and others took part, but, owing to the lateness of the hour, the debate was adjourned until the next meeting of the Club on May 20th, when Mr. OGILVIE GRANT, Mr. J. G. MILLAIS, Dr. BOWDLER SHARPE, the Hon. WALTER ROTHSCHILD, and other ornithologists, promised to bring specimens to illustrate their opinions on the subject.

Mr. PHILIP CROWLEY moved a resolution of sympathy with Count Salvadori, an universally esteemed member of the B.O.C., in the long and painful illness from which he was suffering. This was carried unanimously.

No. XXXVI. (May 30th, 1896.)

THE thirty-fifth meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 20th of May, 1896.

Chairman : P. L. SCLATER, F.R.S.

Members present :—E. BIDWELL, PHILIP CROWLEY, W. E. DE WINTON, J. H. GURNEY, ERNST HARTERT, J. G. MILLAIS, W. R. OGILVIE GRANT, F. PENROSE, A. B. R. TREVOR-BATTYE, C. A. WRIGHT.

A paper, illustrated by specimens, was read from Dr. E.

A. S. ELLIOT, describing the seasonal changes of plumage in the Long-tailed Duck (*Harelda glacialis*). Dr. Elliot remarked as follows:—

“The seasonal change in this Duck is particularly interesting, in that the species differs from most of the *Anatidæ* in having a complete summer plumage.

“This change is due to a complete moult of the pattern on the head, neck, and dorsal region in the male, and to a thorough moult in the female, excepting the white feathers of the belly and the wings. This moult takes place before the birds move northwards, and it is a change which we may suppose to bring it more in harmony with the surroundings of its summer home. We notice, too, that this change is not confined to the male, but is also shared by the female, which becomes distinctly darker as the spring progresses.

“From February to the end of May, by which time the change of plumage is completed, the bird is in moult, the long sickle-shaped white scapulars being some of the last feathers to fall.

“This may be very well traced in the specimens exhibited, which have been obtained in the early months of the year. This Duck being a typical deep-sea Duck, revelling in the green seas of the North Atlantic, and seldom approaching land except in the breeding-season, it appears to follow that this change takes place simply to afford it some protection from its traditional enemies, for of all the family this Duck nests in the most accessible places, near rivers and in swamps, on the ground, whereas others of the same family, *e. g.* the Golden-eye and the Harlequin, seek more secure nesting-sites. The Long-tailed Duck would undoubtedly, if not thus protected by a garb assimilating to the surroundings, be the prey of each and every animal in the Arctic region.

“It cannot be said that the change from the strikingly beautiful winter plumage to that of the more sombre garb of summer is one assumed with a view to attract the other sex, and the fact that it is only the upper part of the body that is moulted—the black feathers of the breast and white ones of the belly being retained as in winter—is further presump-

tive evidence that the change is one effected with the design of concealment. Moreover, in the Orkneys the birds are observed to have paired by April, whilst they are yet in winter plumage.

“The down which the female uses for lining her nest appears as a distinctly new growth on the breast and belly ; it is very thick, and darker in colour than eider-down. The male supplies no down.

“This Duck certainly feeds on fish as well as on molluscs ; for the stomachs of all those examined, without exception, contained fish-scales.

“The eyes pass from straw-colour in the winter dress to dark hazel in summer. I have not noticed any with a red iris.”

The discussion on Dr. J. A. ALLEN's recent paper on the changes of plumage in birds was resumed, and Mr. J. G. MILLAIS exhibited a series of *Harelda glacialis* showing the whole of the changes of the male from its winter plumage to the full breeding-dress. He also exhibited specimens of the Sanderling, the Slavonian Grebe, and the Ptarmigan, showing that in the two last-named species the change in plumage was effected by an absolute alteration in the pattern of the feather, and not by a moult.

Mr. W. R. OGILVIE GRANT supplemented the remarks of Mr. Millais by exhibiting a series of flank-feathers taken from female Red Grouse between the months of October and May, showing the alteration of the patterns month by month.

Mr. ERNST HARTERT also exhibited a series of Birds of Paradise, *Lophorhina*, *Diphyllodes*, &c., which showed a gradual change of pattern in the feather, without a moult.

A paper on the subject will be published later on, in which Dr. BOWDLER SHARPE (who was unfortunately absent from the meeting through illness) will oppose Dr. Allen's views on the subject of moulting. The verdict of the majority of the Members present at the meeting was that a change of pattern in the feathers of certain birds was absolutely certain.

Mr. E. W. DE WINTON gave some further notes on the changes of plumage undergone by the Wading-Birds in the Zoological Gardens; and the CHAIRMAN specially instanced the Spotted Redshank, a specimen of which had recently gained its full summer-plumage.

Mr. TREVOR-BATTYE described the nest and eggs of *Cygnus bewicki*, the nest being composed entirely of moss.

He also gave some details of the plans for the proposed exploration of Spitsbergen, in which he was about to take part.

Dr. R. BOWDLER SHARPE sent a description of two apparently new species of birds:—

CHIONARCHUS CROZETTENSIS.

C. similis C. minori, sed staturâ minore, pedibus (in exuvie) saturatè rubris, et rostri chlamyde minimè elevatâ vel tuberculatâ distinguendus. Long. tot. 14·0 poll., alæ 7·8, tarsi 1·75.

Hab. in Insulis Crozettensibus maris Atlantici.

GARRULUS OATESI, sp. n.

G. similis G. sinensi, sed facie laterali gulâque albis, et dorso cinerascente distinguendus. Long. tot. 13 poll., alæ 6·85.

Hab. in montibus Burmanicis “Chin” dictis.

XXXVII.—*Notices of recent Ornithological Publications.*

[Continued from p. 286.]

69. *Annals of Scottish Natural History.* Nos. 17 & 18, January and April 1896.

The principal paper in No. 17 is an elaborate account of the Tufted Duck in Scotland, by Mr. Harvie-Brown, who has also contributed an article on the subject to vol. xiii. of the Proc. Royal Phys. Soc. of Edinburgh. Dr. John MacRury adds some species to his list of the birds of Barra, and the late Col. Drummond Hay's notes from the Tay district of Perthshire possess a mournful interest. A portrait and a memoir of that excellent ornithologist form the commencement of No. 18; and to this succeeds the first instalment of an important paper on the birds of Berwick-

on-Tweed, by Mr. George Bolam—a valuable supplement to Mr. Muirhead's 'Birds of Berwickshire.' Mr. A. H. Evans has some notes on the ornithology of West Ross-shire, and Mr. Robert Service a short paper on migration in the Solway district.

70. 'The Auk.' January & April 1896.

The first number of our contemporary opens with a sympathetic *In Memoriam* of G. N. Lawrence, by Mr. D. G. Elliot. Mr. F. M. Chapman gives a plate of *Ardetta neoexena*, and expresses his opinion that the bird is quite distinct from *A. exilis*. Mr. O. W. Knight has a paper on *Pinicola enucleator* in captivity, and there are several other contributions respecting this bird since the invasion of 1892-3. Mr. A. W. Anthony describes a Woodpecker belonging to the "*harrisi-hyloscopus*" group, *Dryobates villosus montanus*, subsp. nov., from the Uintah Mountains; and Mr. Gerrit S. Miller, Jun., accords specific rank to *Aphelocoma gracilis*, from the Sierra Bolaños, Jalisco, Mexico. A new subspecies of Warbler, *Compsothlypis americana usneæ*, from Lake Umbagog, Maine, and a new Finch, *Melospiza fasciata merrilli*, subsp. n., from Idaho, are described by Mr. W. Brewster. It is satisfactory to learn from Mr. G. H. Mackay's report that since the Terns and the Laughing Gulls have been protected on Muskeget Island their numbers have largely increased.

The coloured frontispiece to the April number illustrates a paper by Mr. W. Palmer on *Speotyto floridana*, and two woodcuts show the arrangement of the burrows made by this Ground-Owl. Mr. F. A. Lucas's article on the "Taxonomic Value of the Tongue in Birds" is, to a great extent, a reply to some criticisms by Dr. J. A. Allen, who contributes an editorial rejoinder. Miss Florence A. Merriam, who described the nesting-habits of *Phainopepla nitens* in the January number, now contributes some interesting notes on the birds observed in San Diego county, California. Mr. Abbott H. Thayer discourses at some length on the law that underlies protective coloration, which he states to be:—"Animals

are painted by nature, darkest on those parts which tend to be most lighted by the sky's light, and *vice versa*." This is illustrated by a diagram and nine figures from photographs : the most successful of these being no. 8, which is said to represent an American Woodcock on its nest, but in which our eyes have failed to detect any bird whatever. *Otocorys alpestris hoyti*, *Melospiza fasciata juddi*, and *Chordeiles virginianus sennetti* are three new subspecies from Northern Dakota, described by Mr. Louis B. Bishop; while Mr. G. K. Cherrie finds another new subspecies in *Chordeiles virginianus asseriensis*, from San José, Costa Rica. Mr. Witmer Stone straightens out, in his way, the group of Great Horned Owls, and distinguishes a large form from the Great Plains as *Bubo virginianus occidentalis*. An important and critical notice of the 'Birds of Heligoland,' from the pen of Dr. J. A. Allen, deserves attention, for that writer has borne strongly upon several points which many ornithologists on this side of the Atlantic have none the less noticed, but about which, for obvious reasons, they did not care to speak so freely. Connected with this subject are two papers by Mr. F. M. Chapman, and one by Dr. Allen, in the Bull. Amer. Mus. Nat. Hist.; and respecting these Saunders would have written a few words, if he could have obtained the last sheet of Dr. Allen's paper before leaving for the Spanish Pyrenees. But the topic, and its treatment by American naturalists, will not be forgotten by the early autumn, and can afford to wait.

71. *Beal on the Crow Blackbirds and their Food.*

[The Crow Blackbirds and their Food. By F. E. L. Beal. U.S. Depart. Agricult.; Ornith. & Mamm., Bulletin No. 6, p. 233.]

"Crow Blackbird" sounds strange in Europe, but in North America is the well-known name of certain Grackles of the genus *Quiscalus*, which are among the most familiar and conspicuous birds in the Eastern United States and Mississippi Valley. The present essay relates to the Purple Grackle, *Q. quiscula*, and its two subspecies, *Q. q. aeneus* and *Q. q. aglaeus* (according to the nomenclature of the American ornithologists), and to the nature of their food. To ascertain

this, 2258 specimens were carefully examined, and it was found that the contents of their stomachs were, on the average, about half animal matter and half vegetable. Of the animal component twenty-three twenty-fourths are insects, and of these five-sixths are of noxious species. The final verdict is, therefore, that upon the whole Crow Blackbirds are so useful that no general war of extermination should be waged against them. While it must be admitted that at times they injure crops, such depredations can usually be prevented. On the other hand, by destroying insects they do incalculable good.

72. *Beal on the Food of Woodpeckers.*

[Preliminary Report on the Food of Woodpeckers. By F. E. L. Beal. U.S. Dept. of Agricult. ; Ornith. & Mamm., Bulletin No. 7, p. 7.]

Dr. Merriam has set one of his staff to work on the food of the Woodpeckers generally, and here we have a preliminary report on the results of his investigations. This is based on the examination of the stomachs of 679 specimens belonging to seven species of the Eastern U.S. The crimes alleged against Woodpeckers are that they destroy trees by "sucking sap," and make depredations on fruit and grain. One species, the Red-head (*Melanerpes formicivorus*), has in some localities developed a most abnormal taste. It is said to enter poultry-houses and suck the eggs, and to prick holes in the nests of the cave-swallows to get at their contents. Another species of *Melanerpes* (*M. erythrocephalus*) is commonly known in Florida as the "Orange-borer," and does a certain amount of damage in the orange-groves. But, as will be seen by Prof. Beal's careful tables of percentages, all the Woodpeckers eat a large amount of animal food consisting mainly of insects (though in one case the bones of a frog (!) were detected), and they may be fairly classed as doing a great deal more good than harm.

73. *Boucard's 'Humming Bird.'*

[The Humming Bird ; a Quarterly Scientific, Artistic, and Industrial Review. Edited by A. Boucard. Vols. II.-V. 8vo. London, 1892-95.]

'The Humming Bird,' of which we noticed the first volume

in 1892 (Ibis, p. 349), is now complete in five volumes, and the Editor has kindly sent us a complete set.

The most important ornithological article in this Miscellany is Mr. Boucard's "Genera of Humming Birds," which was commenced in part i. of vol. ii. (1892), and is brought to a conclusion in part iv. of vol. v. (1895). It contains descriptions of 539 species, and adds 13 others in an Appendix. Mr. Boucard makes a new system, and divides the Order Trochili into 18 families. The following genera are described as new :—

Gmelinius (iv. p. 108), type *Thalurania wagleri* (Less.); *Lawrencius* (iv. p. 173), type *Thaumatias cupreiceps*, Sel. et Salv.; *Warszewiczia* (v. p. 224), type *Heliotrypha viola*, Gould; and *Alcidius* (v. p. 345), type *Orthorhynchus estella* (d'Orb.).

The following Humming-birds are described as new species :—

Vol. II. *Phaetornis rupurumii*, *Formicivora stictocorypha*, *Heliodoxa berlepschi*, *Heliotrypha simoni*, *Heliangelus rothschildi*, *Erioenemis albogularis*, *Chlorostilbon speciosa*, *Saucerottia nunezi*, *Uranomitra columbiana*, *Phaethornis panamensis*, *Homophania lawrencei*, *Lophornis hawaxwelli*.

Vol. III. *Metallura peruviana*, *Lesbia æquatorialis*, *Oreotrochilus bolivi-
anus*, *Hylocharis brasiliensis*, *Amazilia forreri*, *Saucerottia wellsii*, *Uranomitra whitelyi*, *Agyrtria speciosa*, *Chrysurnia buckleyi*, *Phaethornis garleppi*, *Hemistephania guianensis*.

Vol. IV. *Chlorostilbon wiedi*.

Vol. V. *Glaucis roraimæ*, *Glaucis rojasi*, *Eremita whitelyi*, *Polyerata rosenbergi*, *Glaucis columbiana*.

In a List of Birds collected by M. Hardy at Porto Real, eighty miles from Rio in the interior, prepared by Mr. Boucard and Count Berlepsch (II. B. ii. p. 41), 74 species are enumerated, and one, *Formicivora stictocorypha*, is described as new.

Mr. Boucard's "Travels of a Naturalist," which record his numerous adventures in foreign countries, will be found to contain many interesting passages.

74. Bruun on the Birds of South Greenland.

[Ornithologiske Iagttagelser fra Sydgrønland i Sommeren 1894. Af Daniel Bruun. Vidensk. Meddel. Kjöbenhavn, 1895, p. 175.]

Herr Bruun's notes contain the results of his observations made during a visit to the district of Julianehaab in the summer of 1891 for archaeological purposes. They relate to 30 species.

75. *Büttikofer on Phasianus ignitus and its Allies.*

[On *Phasianus ignitus* and its nearest Allies. By Dr. J. Büttikofer. Notes Leyden Mus. xvii. p. 169.]

Following Mr. Elliot, Mr. Ogilvie Grant, in his catalogue of the Game-birds in the British Museum, united *Euplocamus nobilis*, Selater, to *E. ignitus* (Lath.). Mr. Büttikofer now shows that this was incorrect, and that there are probably four species of this genus of Phasianidæ, which, following Mr. Grant, he calls *Lophura*—namely, *L. ignita*, *L. nobilis*, *L. sumatrana*, and *L. vicilloti*. Unfortunately the exact habitat of *L. ignita* is not known, and there are other dark questions to be cleared up concerning this group of Pheasants.

76. *Chapman on Ardetta neoxena.*

[The Standing of *Ardetta neoxena*. By Frank M. Chapman. The Auk, xiii. p. 11.]

Mr. Chapman has made a careful study of the curious little Heron described by Mr. Cory in 1886 from a specimen obtained in Florida, and named *Ardetta neoxena*. About 15 specimens of it are at present known, some of which vary considerably *inter se*. *A. neoxena* has been supposed to be a colour-phase of *A. exilis*. Mr. Chapman proves that this view cannot be safely maintained, although he does not profess to be able to explain the unusual degree of variation in the specimens. *Ardetta neoxena* must therefore remain as a valid species.

77. *Elliot on two new Ptarmigans*

[Descriptions of an apparently new Species and Subspecies of Ptarmigan from the Aleutian Islands. By D. G. Elliot, F.R.S.E. Auk, xiii. p. 24.]

Lagopus evermanni is described as a new species from Attu Island, "one of the Near-Island group," about 1400 miles

west of Unalaska. It is "apparently most nearly allied to *L. rupestris nelsoni* of Unalaska and the Shumagin Islands, but distinguished from all the Ptarmigans of the western hemisphere by its entire white and black plumage." *Lagopus rupestris townsendi* is a new subspecies from Kyska and Adak Islands of the Aleutian chain.

78. *Finsch on the Avifauna of New Zealand.*

[Charakteristik der Avifauna Neu-Seelands, als zoogeographische Provinz, in ihren Veränderungen und deren Ursachen. Von Dr. O. Finsch. 'Globus,' Band lxxix. Nr. 2 bis 4, 1896.]

This is a popular essay on the Avifauna of New Zealand, written by our friend Dr. Finsch for the geographical journal 'Der Globus.' The author treats of the remarkable extinct forms first, and then of the existing avifauna. We observe that the two illustrations of birds introduced in the text are both copies of woodcuts prepared by Mr. Smit for works published in this country. We think that the source from which they were taken might have been acknowledged.

79. *Fisher on Hawks and Owls considered agriculturally.*

[Hawks and Owls, from the Standpoint of the Farmer. By A. K. Fisher, M.D. Reprinted from the Year-book of the U.S. Dept. of Agricult. 1894, p. 215.]

We are always glad to receive fresh evidence as to the evil effects of upsetting the balance of nature by the destruction of birds of prey, and could wish this subject were as well put before us in this country as it is in America. We fully agree with Dr. Fisher that "Hawks and Owls are mostly beneficial." There are, no doubt, occasional exceptions, but whatever gamekeepers may do, farmers should carefully preserve all of them. As regards the land, the little evil they do is far exceeded by the good.

80. *Hartlaub on Birds recently Extinct or likely to become so.*

[Ein Beitrag zur Geschichte der ausgestorbenen Vögel der Neuzeit sowie derjenigen deren Fortbestehen bedroht erscheint. Von Dr. G. Hartlaub. Abh. naturw. Ver. Bremen, xiv. Heft 1.]

Our Foreign Member and much valued contributor, Dr. G.

Hartlaub, the Nestor of European ornithologists, as he may now well be called, sends us a copy of a second and revised edition of his essay on birds that have recently become extinct, and on those the continued existence of which seems to be seriously threatened. We have already noticed the first edition of this excellent memoir (*Ibis*, 1895, p. 494), but we must say a few words about the second, with which, our friend writes us, he hopes "to make an honourable exit from the ornithological forum." We trust, however, that we may receive many more contributions to our science from Dr. Hartlaub's pen.

It was remarked before, as regards species threatened with extinction or nearly extinct, of which Dr. Hartlaub includes 20 in his list, that our American friends seem to have been a little premature in placing some of their birds in this category. It is certain that a number of Carolina Parakeets (*Conurus carolinensis*) have lately been imported into Europe and sold by the dealers at a few shillings each*. Examples of this bird are in the Zoological Society's Parrot-house. Moreover, those who study the 'Auk' will learn that the Californian Vulture (*Pseudogryphus californianus*) is still by no means rare in some localities of the Far West—a recent observer having seen 26 of these birds in the air at one time in the Sierra Nevada. Of actually extinct birds of the present period, Dr. Hartlaub mentions 26, some of which (sc. *Foudia bruante* and *Nestor norfolciensis*) are not represented in any museum, and are known only from descriptions.

As regards the Great Auk (*Alca impennis*), Dr. Hartlaub tells us that two geologists lately at work near Falsterbo, in Southern Sweden, discovered in some loam-deposits in the middle of remains of Arctic plants a hollow cast of an egg of the size and shape of the egg of this bird, upon the walls of which were some pieces of eggshell. The dark spots on the inner surface of these fragments correspond well, as testified by Prof. Steenstrup, with the well-known markings of the

* [A correspondent writing from Kissimmee, Florida, says:—"There have been some men here from the Smithsonian Institution, who have carried back several hundred skins of the Parakeet with them."—EDD.]

eggs of *Alca impennis*. There can be little doubt, therefore, that an egg of the Gare-fowl had been dropped here in former days.

In conclusion we may say that Dr. Hartlaub's whole essay is of the most interesting nature to ornithologists and merits their careful study. The text and the numerous footnotes alike are crammed throughout with curious information upon rare birds.

81. Loomis on Californian Water-Birds.

[California Water-Birds. By Leverett M. Loomis. Proc. Cal. Acad. Sc. ser. 2, vol. v. pp. 179-224 (1895), and vol. vi. pp. 1-30 (Feb. 21st, 1896).]

The former of these interesting papers contains an account of the author's observations on the water-birds which frequent the coast of Monterey from the middle of June to the end of August. Migration southward had begun by June 14th, and subsequently increased, as might be expected, but subject to considerable fluctuations. The Long-tailed Skua was obtained on August 23rd, apparently for the first time in California. The second paper relates to observations made in mid-winter, when a great feature was the migration—by thousands—of Black-vented Shearwaters (*Puffinus opisthomelas*) on their way, as indicated by the condition of their organs of reproduction, to some breeding-place, which Mr. Loomis thinks may be in the temperate zone of the southern hemisphere. Both papers are illustrated by maps. Our Old-World *Larus canus*, now said to be common on that coast in winter, had already been reported (with a note of interrogation) from Southern California by Mr. Henshaw.

82. Lorenz-Liburnau on a new Dendrocolaptine Bird.

[Ueber einen vermuthlich neuen Dendrocolaptiden. Von Dr. Ludwig von Lorenz-Liburnau. Verh. k.-k. zool.-bot. Gesell. Wien, xlv. p. 363, and Ann. k.-k. naturh. Hofmuseums, xi. Heft 1.]

Dr. L. v. Lorenz-Liburnau bases a new species of the Dendrocolaptine genus *Dendrexetastes* on a specimen obtained on June 30th, 1888, near Pará, in Brazil, and proposes to

name it *D. paraensis*. It has been compared with four examples of *D. temmincki* in different museums. A coloured figure of the new species, of the natural size, is added.

83. *Lucas on the Tongues of North-American Woodpeckers.*

[The Tongues of Woodpeckers. By F. A. Lucas. U.S. Dept. of Agricult.; Ornith. & Mamm., Bulletin No. 7, p. 35.]

In connection with the investigation carried on by the Agricultural Department of the U.S. Government on the food of Woodpeckers (see Prof. Beal's report above noticed, p. 408), Mr. Lucas has examined the tongues of 12 species of this family, and now describes and figures them. Although there is a general resemblance, there is a large amount of variation in details, and the conclusion is arrived at that the modifications of the tongue in the Woodpeckers "are directly related to the character of the food, and are not of value for classification."

84. *Meyer and Wigglesworth on Birds from North-east Celebes, Peling, and Banggai.*

[Eine Vogelsammlung von Nordost Celébes und den Inseln Peling und Banggai. Von A. B. Meyer und L. W. Wigglesworth. Abhandl. u. Ber. k. zool. u. anthrop. Mus. Dresden, 1896-97, No. 2.]

The Dresden Museum has lately received a considerable collection of bird-skins from the eastern peninsula of Celebes and the adjacent islands Peling and Banggai, which are shown in a chart attached to this memoir. There are 58 species from East Celebes, 50 from Peling, and 43 from Banggai represented in it. The following species and subspecies are described as new:—*Loriculus sclateri ruber*, from Peling and Banggai; *Pyrrhucenator celebensis rufescens*, from E. Celebes; *Pelargopsis dichrorhynchus*, from Peling and Banggai; *Monachalcyon capucinus*, from E. Celebes; *Hermotimia porphyrolæma scapulata*, from E. Celebes; *Zosterops subatrifrons*, from Peling; *Ptilopus subgularis*, from Peling and Banggai. It is shown in a series of tables that the avifauna of Peling and Banggai, although the strait that

separates Peling from Celebes is barely 20 kil. in width, belongs essentially to that of the Sula Islands, which lie to the east, and at a much greater distance.

85. North on *Zosterops cærulescens*.

[On the Seasonal Changes in the Plumage of *Zosterops cærulescens*. By Alfred J. North, F.L.S. Records Austral. Mus. ii. p. 98.]

Mr. North shows clearly that the *Zosterops westernensis* of Quoy & Gaimard, the type of which was obtained by them at Western Port, Victoria, was based on the spring and summer attire of *Z. cærulescens*. He also points out that *Z. tephropleura*, Gould, of Lord Howe Island, associated by Dr. Sharpe with *Z. westernensis*, is a good species, and that *Z. ramsayi*, Masters, from Queensland, also considered by Dr. Sharpe as probably identical with *Z. westernensis*, is a distinct species, to be recognized by the olive-yellow under tail-coverts.

86. North's 'Oological Notes.'

[Oological Notes. By Alfred J. North, F.L.S. Proc. Linn. Soc. N. S. Wales, ser. 2, vol. x. p. 215.]

Mr. North describes the eggs of the following Australian species:—*Eudynamis cyanocephala* (from the nest of *Mimeta viridis*), *Megalurus galactotes*, *Platulea melanorhyncha*, and *Ardetta pusilla*. The Black-faced Spoonbill was found breeding in a swamp on the River Murray, in company with the Australian White Ibis, *Thresciornis strictipennis*.

87. North on *Chlamydodera orientalis*.

[Notes on *Chlamydodera orientalis*, Gould. By Alfred J. North, F.L.S. Victorian Naturalist, xii. p. 104.]

The eggs of the Eastern Lilac-naped Bower-bird are described and figured from specimens obtained in the Gulf District of Northern Queensland in August 1895. Further particulars are given about the range of this eastern representative of *Chlamydodera nuchalis*, and about the curious objects which it selects for the ornamentation of its bower, amongst which bones are conspicuous.

88. *Noska and Tschusi zu Schmidhoffen on the Caucasian Snow-Partridge.*

[Das kaukasische Königshuhn (*Tetraogallus caucasicus*, Pall.). Eine monographische Studie von Max Noska unter Mitwirkung von Victor, Ritter von Tschusi zu Schmidhoffen. Separatabdr. aus 'Ornith. Jahrb.' vii. 1896.]

This is a pendant to the excellent treatise on the Black-cock of the Caucasus (*Tetrao mlokosievici*) of the same authors published last year (see Ibis, 1896, p. 277), and, like its precursor, has been prepared and edited by Victor, Ritter zu Schmidhoffen, from the notes of Max Noska. Noska, who has since unfortunately lost his life, was "Jagd-leiter" to one of the Russian Grand Dukes, who have extensive shooting-rights in the Caucasus, and had thus good opportunities of becoming acquainted with this noble bird. Of these he appears to have availed himself very successfully, as the account of the habits of this inhabitant of the Caucasian mountain-summits is very thorough and complete. The best mode of shooting the *Tetraogallus*, which is only permitted in the months of October and November, is also described. As the bird is not found below the level of 7000 feet, the chase of it appears to be by no means an easy task.

89. *Rotzell on the Birds of Narberth, Pennsylvania.*

[Birds of Narberth, Pa., and Vicinity. By W. E. Rotzell, M.D. 8vo. 1895.]

Dr. Rotzell reprints a list of the birds he has noticed near Narberth, in Montgomery County, Pennsylvania, originally prepared for a newspaper—"The Citizen." It contains 108 species, on which short notes are given. We observe that the Turkey-Vulture (*Cathartes aura*) is included as a "summer resident," and that nests are often met with.

90. *Salvadori on Loria's Collections in Eastern Papuasias.*

[Viaggio di Lamberto Loria nella Papuasias Orientale.—XV. Collezioni Ornitologiche descritte da Tommaso Salvadori. Nota quarta: Uccelli della Nuova Guinea Meridionale-Orientale. Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, xvi. p. 55.]

Count Salvadori's fourth treatise on the birds collected by Dr. Lamberto Loria gives us an account of two collections made by that distinguished traveller in various localities on the coast of South-eastern New Guinea in 1891, 1892, and 1893. These collections contain altogether 774 specimens, which are referred to 187 species. Five of these have been already described as new in 1894 (*cf.* *Ibis*, 1894, p. 563), and 11 more are characterized in the present memoir.

Count Salvadori points out that the fauna of Moroka, a mountainous region, formerly visited by Goldie, is different from that of the adjoining coast-lands. In this district only are found such rare and beautiful Paradise-birds as *Paradisornis rudolphi*, *Parotia lawesi*, *Lophorhina minor*, and *Loria lorice*.

The study of Loria's specimens has enabled Count Salvadori to identify several of the new species lately described by Mr. De Vis from Sir William Macgregor's collections*. Besides the Paradise-birds already mentioned, a fine adult male example of the rare *Casuarus picticollis*, *Scl.*, was obtained in Moroka.

The species described as new in the present paper are:—

Syma megarhyncha.

Ægotheles rufescens.

Monarcha heterurus.

Gerygone giulianettii.

Pachycephala sharpei.

Euthyrhynchus meyeri.

Sericornis perspicillata.

— *olivacea*.

Eupetes lorice.

Manucodia orientalis.

Diphyllodes xanthoptera.

91. *Salvadori on Birds from Somaliland and Gallaland.*

[Uccelli raccolti da Don Eugenio dei Principi Ruspoli durante l'ultimo suo viaggio nelle regioni dei Somali e dei Galla. Nota di T. Salvadori. *Ann. Mus. Civ. Genova*, ser. 2, xvi, p. 43.]

Don Eugenio dei Principi Ruspoli, as is well known, lost his life during his second exploring journey in Eastern Africa, in an encounter with an elephant near Lake Bissan Abbaia,

* 'Report on Ornithological Specimens collected in New Guinea.' By C. W. De Vis, 1894. (Noticed in *Ibis*, 1895, p. 280.) "On the Bower-bird recently described by C. W. De Vis as *Cnemophilus marie*." By P. L. Sclater. *Ibis*, 1895, p. 343.

north-east of Lake Stephanie, on the 4th of December, 1893. Count Salvadori gives us here a list of the birds obtained by Count Ruspoli during this expedition. They were 35 in number, belonging to 32 species. Unfortunately the skins are not in good condition, and have no exact localities attached to them. Three species are described as new, namely, *Turacus ruspolii*, *Serinus xantholema*, and *Hyphantornis dicrocephala*. The occurrence of *Grus carunculata* so far north is a new fact in distribution. Sir H. H. Johnston has lately obtained it in Nyasaland, and Reichenow has included it in his list of the Birds of German East Africa.

92. Sharpe's 'Handbook to the Birds of Great Britain.'

[Allen's Naturalist's Library. Edited by R. Bowdler Sharpe, LL.D., F.L.S., &c. A Handbook to the Birds of Great Britain. By R. Bowdler Sharpe, LL.D., Assistant Keeper, Sub-Department of Vertebrata, Zoological Department, British Museum. Vol. III. London: W. H. Allen & Co., 1896.]

The third volume of Dr. Sharpe's 'Handbook' finishes the Ducks, and then proceeds to the Herons, Cranes, and Waders (as generally termed). It contains altogether an account of 92 species, which are referred to 70 genera, giving an average of about 1·3 species to each genus, which seems rather a meagre allowance. Going on at this rate we shall soon find our species to coincide in number with our genera.

It is quite possible that *Totanus stagnatilis* may have occurred in this country, but the evidence given by Dr. Sharpe of its having done so appears to us to be hardly sufficient.

We observe that Dr. Sharpe quotes amongst his synonyms the 24th and 26th volumes of the 'Catalogue of Birds in the British Museum.' These volumes are not yet published, although we hope to have the pleasure of seeing them out before the end of the present year. It would have been better, we think, to have noticed this fact in the preface, as it may be argued hereafter that they must have been published before the present volume was issued. Although, as we have now and previously stated, we cannot agree to

Dr. Sharpe's nomenclature, we are fully persuaded that the 'Handbook' has many merits, and have no doubt that it will acquire a large circulation. It is illustrated by 35 plates.

93. Sharpe's '*Monograph of the Paradiseidæ*.'

[*Monograph of the Paradiseidæ*, or Birds of Paradise, and *Ptilonorhynchidæ*, or Bower-Birds. By R. Bowdler Sharpe, LL.D., F.L.S., &c. Part V. Folio. London: H. Sotheran & Co., 1895.]

The fifth part of Dr. Sharpe's beautiful monograph, issued last year, which appears to have escaped our notice, contains figures of the following species :—

Drepanornis albertisi.	Parotia sexpennis.
Semioptera wallacii.	Sericulus melinus.
Trichoparadisea gulielmi.	Ælurædus maculosus.
Diphyllodes hunsteini.	— geislerorum.
Lophorhina minor.	Lycocorax morotensis.

Trichoparadisea gulielmi is certainly a splendid bird, and we are glad to see a good picture of it. But we cannot agree with Dr. Sharpe in thinking that Dr. Meyer was right in making it the type of a new genus. In our eyes it is a very good *Paradisea*, to all intents and purposes.

94. Shelley's '*Birds of Africa*.'

[The Birds of Africa, comprising all the Species which occur in the Ethiopian Region. By G. E. Shelley, F.Z.S., F.R.G.S., &c. Vol. I. R. II. Porter, 1896.]

A most useful book, we are quite sure, will Capt. Shelley's volume on the birds of Africa be found by all ornithologists who have to deal with the *Ornis Æthiopica*. It contains a complete list of the birds of Africa south of the Atlas and the First Cataract of the Nile, including those of Madagascar and its islands—that is, of the birds known to the author; and he knows them well, having devoted his studies mainly to the *Ornis* of Africa for the last 30 years. Besides the authority for each name, references are given to the first description

and to the best figures. The *patria* is indicated only by a letter, stating in which of the five subregions into which the author divides the whole avifauna the species is found.

The number of species enumerated in the list is 2534, of which 1449 are Passeres.

There seem to be only three species described as new, namely, *Textor senegalensis* (p. 34), *Chlorocichla mombasæ* (p. 64), and *C. zambesiæ* (p. 64).

The following new generic terms are introduced :—*Clytospiza* (p. 32), type *Pytelia monteiri*, Hartl.; *Pachyphantes* (p. 36), type *Hyphantornis superciliosus*, Shelley; *Neshyphantes* (p. 36), type *Foudia flavicans*, Newt.; *Othyphantes* (p. 37), type *Sycobrotus reichenowi*, Finsch; *Rhodornis* (p. 67), type *Pholidornis rubrifrons*, Sharpe & Ussher.

We are pleased to see that Capt. Shelley does not object to correct orthographical errors in nomenclature, and we venture to point out several cases in which he has inadvertently passed over what are obvious mistakes of this character. "*Coliipasser*" (p. 23) should be "*Coliopasser*"; "*Phileterus*" (p. 27) should be "*Philetærus*"; "*Neshyphantes*" (p. 36) should be "*Nesyphantes*," the aspirate being omitted in composition, and the same is the case with "*Othyphantes*" (p. 37); *Nicator* (p. 57) is no doubt a mistake for "*Necator*," a slayer.

In placing *Hypocolius* under the Sturninæ, we do not think Capt. Shelley has quite hit on its real affinities. It is, no doubt, an isolated form, but apparently more allied to the Laniidæ and Campephagidæ than to the Starlings. There is certainly nothing Starling-like in its demeanour or mode of nesting, as may be seen by observation of the living specimens in the Zoological Society's Parrot-house.

We do not profess to understand Capt. Shelley's classification, nor why the Penguins are placed between the Petrels and Flamingoes, but this will, no doubt, be explained to us in the next volume of the 'Birds of Africa.'

XXXVIII.—*Letters, Extracts, Notices, &c.*

WE have received the following letters, addressed "to the Editors of 'The Ibis'":—

SIRS,—The reviewer of my volume on the Chenomorphæ, Crypturi, and Ratitæ in the last number of 'The Ibis,' although speaking very kindly of my work, has criticized some of the results I arrived at.

First, dividing systematists between "lumpers" and "splitters," he thinks that I have yielded too freely to the tendency of splitting, both in the matter of generic and specific divisions, especially as regards the species of Tinamous. As I have introduced no new genera among the latter, I suppose that the "furor genericus," as it was once called by Dr. Hartlaub, has reference to the Ducks, to which I have added four new genera. I am sorry that the reviewer has not shown that there was no good ground for them. As to the number of new species established by me, fourteen of which belong to the Tinamous, I shall confine myself to the remark that the Tinamous, forming a very difficult and obscure group, had never been thoroughly studied before I tried to do so, and I shall wait quite confidently for the next monographist of the group to hear his verdict about my new species.

The second point on which I am criticized refers to the changes of nomenclature proposed by me, and which the reviewer declares are absolutely alarming! He mentions particularly the Bean Goose and the White-eyed Duck, which I have respectively called *Anser fabalis* (Lath.) and *Nyroca africana* (Gm.) *.

As to *Anser fabalis*, the reviewer admits that *Anas fabalis*, Lath., has priority over *Anas segetum*, Gm., but he deems it convenient to regard it as withdrawn by Latham and obsolete. I do not know whether ornithologists who stick to the "demon of priority" will agree with the reviewer.

* I do not suppose that the reviewer objects to my having restored the name *Chauna chavaria* to the Venezuelan bird generally known as *Ch. derbiana*, a change which ought to have been made long ago.

Anyhow, I should like to ask him whether he thinks the case of *Anser fabalis* so very different from that of *Puffinus gravis* (O'Reilly), a name used by Mr. Salvin (Cat. Birds B.M. xxv. p. 373) in preference to *Puffinus major* (Faber). Under this name the Greater Shearwater had been known for seventy-four years, from 1822, till Mr. Salvin revived O'Reilly's name, which has a priority of four years over that of Faber. The reviewer of Mr. Salvin's volume says that the nomenclature used there is such as will be familiar to most students of the order. I must confess that the name *Puffinus gravis* was not familiar to me, and I should say that it was quite unknown to my brother ornithologists before Mr. Salvin revived it.

As to the name *Nyroca africana* (Gm.), the reviewer asserts :—

1st. That "*africana*" has never been used as the specific name of the White-eyed Duck ;

2nd. That Gmelin's name *Anas africana* may or may not refer to that species ;

3rd. That Gmelin's name *Anas ferruginea* has been in use for the last hundred years.

All these three statements are incorrect. Beginning with the second point, which is the foundation of the question, Gmelin's name *Anas africana* is based on the "Sarcelle d'Egypte," D'Aubenton, Pl. Enl. no. 1000, which, as anybody will easily recognize, is an excellent representation of the White-eyed Duck, so that there is no possible doubt whatever that the name *Anas africana* applies to the species under consideration.

Coming to the third point, it is not correct to say that *Anas ferruginea* has been in use for the last hundred years. The truth is that this name—used by Gmelin (1788) and the following compilers: Latham (1790), Bonnaterre (1790), Vieillot (1816), Dumont (1817), and Stephens (1824)—was first revived in 1872 by Harting (Handb. Brit. B. p. 64) and by Sharpe and Dresser (B. of Eur. vi. p. 581). During that period of forty-eight years the name *ferruginea* was never

used by ornithologists * who were acquainted with the White-eyed Duck, but they constantly employed either Borkhausen's name "*leucophthalma*" or the specific term "*nyroca*."

Going back to the first point—the assertion that "*africana*" has never been used as the specific name of the White-eyed Duck,—I repeat that this also is incorrect. In fact, the name *Nyroca africana* was used in 1844 by G. R. Gray in the 'List of Birds in the Brit. Mus.' iii. p. 144, thus reviving the name *africana* twenty-eight years before Harting, Sharpe and Dresser revived the younger name *ferruginea*. It follows from all this that the name *Nyroca africana* is not a bad name, but the proper one for the White-eyed Duck.

The case of *Nyroca africana* is very much like that of a small African Teal named *Querquedula hottentota*, Smith (1837), and recognized under this name till 1880, when Mr. Selater (P. Z. S. 1880, p. 522), following Prof. A. Newton (P. Z. S. 1871, p. 649), identified the bird with *Anas punctata*, Burchell; and although it had been for more than forty years in the quiet possession of the previous name, it was registered by Mr. Selater as *Querquedula punctata*, and nobody found fault with that, although *Querquedula hottentota* was the familiar name, and there was another Duck (*Anas castanea* = *Nettion castaneum*) currently known under the name *Anas punctata*.

Yours &c.,

T. SALVADORI.

Zoological Museum, Turin,
April 16th, 1896.

[Our reviewer regrets to have any controversy with Count Salvadori, of whose splendid services to ornithology he has the greatest appreciation. But his view is that "*fabalis*" was not intended as a specific name by Latham, but only as a Latin translation of "Beau." This, he thinks, is shown by the fact that Latham did not use it (or even mention it) in

* Burmeister, in 1856 (Syst. Uebers. Th. Bras. iii. p. 440), used the same name for *Erismatura ferruginea*. The name *Anas ferruginea* was used in pre-Linnean times for *Casarca rutila*.

his 'Index Ornithologicus.' As regards the name "*africana*" for the White-eyed Duck, it must be allowed, he alleges, to be not appropriate for a bird that only visits the northern part of Africa in the winter. Our reviewer, in spite of what Count Salvadori says, still maintains it to be a "bad one"; but this is a matter of opinion. Moreover, he urges that it was proposed in the same work as "*ferruginea*," and has therefore no precedence in point of date over the latter term.—EDD.]

SIRS,—I have to thank you very much for sending me the uncoloured lithograph of *Falco richardsoni*, and I waited till my 'Ibis' came to see whether a conspicuous fault that at once attracted my notice was in any way lessened in the colouring. This is the drawing of the tibial plumes. Keulemans has depicted these by a hard, well-formed feather, somewhat resembling one from the scapulars. These tibial plumes are always filamentary or loose disintegrated feathers, having quite a "fluffy," soft appearance.

These feathers are not so easy to draw, and if Mr. Keulemans were to study some of the living Raptors in the Zoological Gardens he would soon correct the error of which I speak. In other respects this plate is one of the most beautiful that I have ever seen. When I cover the bird's legs with my finger-end it is a very different picture,—but that tibial plume is terrible!

In spite of it, however, a good service has been done, and a most beautiful Merlin will now be well known to most ornithologists who take an interest in Raptors.

I am,

Yours &c.,

W. E. BROOKS.

Mount Forest, Ontario, Canada,

April 24th, 1896.

SIRS,—I think that the following notes on certain events in my aviaries may interest many members of the B. O. U. :—

Towards the end of February 1892 a pair of Australian

Wattled Lapwings (*Sarciophorus pectoralis*), obtained from a dealer in the previous year, made a slight excavation in the gravel-path in their compartment—the edges being slightly raised above the level of said path—and lined it (if I may use that expression) with small stones, which they trod in, or arranged with their beaks, so as to present a tolerably smooth interior surface; no other lining of any kind was used.

On March 7th an egg was found in this nest. I may roughly describe this egg as of a dull olive-green with brown spots and blotches; it was smaller than an average egg of our Common Peewit, and less pyriform, although in colour it closely resembled some varieties of that species. There was a second egg in the nest on March 9th, and my aviary-keeper assured me that two “nest-eggs” that were placed in the nest were removed and broken by some Oyster-catchers which, with other species, shared the same compartment. A third egg was laid away from the nest, and the birds began to make another nest in the same fashion on March 11th. To make a long story short, three or four eggs were laid in this second nest, and three birds eventually hatched out. One of them died shortly afterwards, and in 1895 only one of the whole family—a young female of the 1892 brood—survived.

In the present year (1896) the bird just mentioned paired with a Cayenne Lapwing (*Vanellus cayennensis*). These birds formed a nest, this time on the turf, using no stones in its construction. There were two eggs in the nest on February 25th, and the birds began to sit, taking alternately their turns in incubation. A third egg was in the nest on February 29th. The weather was extremely cold and wet, and all three eggs proved to be addled.

Three or four more eggs were laid in the same nest in the first week of April, but destroyed—as we believe—by mice. I am sorry I have no exact record in my journal as to the precise dates, but on April 20th the female bird was sitting on two eggs in a pebble-nest exactly resembling the first mentioned above, adding two to this number afterwards. On May 16th one young Plover was running about, both parents being extremely watchful and jealous of the approach

of any other bird, but both still taking their turn on the unhatched eggs. A second young bird left the nest on May 18th. Three days afterwards I had the nest examined, and we discovered then that one egg had entirely disappeared, the remaining one being addled. This latter resembles very much in colour an average egg of the Common Peewit, but in shape differs a little from those of the pure Australian bird. At the present time of writing (May 23rd) both young birds are reported to be thriving.

On May 7th, 1896, my aviary-keeper informed me that my pair of *Apteryx oweni* were carrying sticks and other nesting-material into a burrow which (as he states) had been made by an *Apteryx mantelli* in the bank of an enclosed pond in our pleasure-grounds. On May 16th there was an egg at the end of this burrow, which can be just reached by a man inserting his arm. I am, of course, very anxious that these birds should not be disturbed; but I am so interested in the event that I cannot help asking my keeper to look occasionally into the burrow, which is constantly occupied by both parents. He told me yesterday that since the egg was laid the birds have carried in a great quantity of dead leaves, twigs, and other rubbish, thereby considerably diminishing the diameter of the tunnel, but Mr. A. Trevor-Battye, who looked in yesterday, assured me that he could distinctly see the egg, and was much astonished at its size.

A pair of Burrowing Owls (*Speotyto cunicularia*) are now sitting on five eggs in one of the compartments of my aviary in a shallow burrow made by themselves. The sitting bird can be seen from the front of this compartment. I may mention that two individuals of this species were hatched out here last year, of which one still survives.

A specimen of Savigny's Eagle-Owl (*Bubo ascalaphus*), which has been living peaceably for some time past in the same cage with two Cape Eagle-Owls (*Bubo capensis*), laid an egg on April 7th, and a second three days later, but showed no disposition to sit.

Yours &c.,

Lilford Hall, May 23rd, 1896.

LILFORD.

Movements of Ornithologists and Collectors.—Mr. A. Trevor-Battye left Hull on May 28th for Spitsbergen with Sir Martin Conway's expedition, and during a somewhat lengthened summer-stay there, he will, no doubt, make some additions to its rather scanty avifauna, although we cannot expect many new discoveries in these high northern latitudes.

Mr. Perkins, the naturalist in the employ of the Committee for the Exploration of the Sandwich Islands, is still busy in that group, and has lately sent home a new collection of some 260 skins of birds from Hawaii, Kauai, and Oahu. There seem to be no novelties amongst them, but some of them belong to species of which examples have not previously been sent home by Mr. Perkins.

Mr. G. E. H. Barrett-Hamilton has been sent by the Colonial Office to the North Pacific, along with Prof. D'Arcy Thompson, to investigate the condition of the Fur-Seals, and will doubtless pay some attention to the bird-life of those regions also.

Mr. D. G. Elliot is by this time far in the interior of Somali-land, having left Aden for Berbera at the end of April. He has two experienced collectors with him, and although his first object is to get good specimens of the larger mammals, we may be quite sure he will not forget the birds.

Mr. R. M. Barrington, in conjunction with Prof. Haddon and other Irish naturalists, is projecting a voyage to Rockall this summer, in order to make as thorough an examination as possible of that interesting little bit of stray land and its feathered inhabitants.

Mr. Borchgrevink, whose Antarctic voyage and experiences in 1894 were described at the International Geographical Congress in August last (see '*Nature*,' vol. 52, p. 375), will leave England this autumn as the head of a scientific expedition to the Antarctic Continent. These daring explorers have arranged to join a whaling-ship which will land them at Cape Adare in South Victoria-land (lat. $71^{\circ} 25' S.$), and will return for them in December 1897.

Mr. Charles Hose (writing from Baram, Sarawak, on the 8th of February last) says that he has just returned from a

most successful trip to Celebes and the adjoining islands. He has brought large collections from Mount Masarang, near Menado, and a fair lot of skins from the Islands of Sangir and Tellaud. As regards Baram, he has nearly given up collecting bird-skins in that district, having quite exhausted the novelties.

New Edition of Shelley's 'Birds of Egypt.'—We are much pleased to hear that Capt. Shelley has decided to prepare a new edition of his 'Handbook of the Birds of Egypt,' and we are sure that he will be glad of information on the subject from those who have lately visited that country. The first edition was published in 1872, and is now out of print.

Seebohm's Unfinished Works.—It has been arranged, we are informed, that Seebohm's Monograph of the Thrushes, which was left by the author incomplete at his decease, shall be finished and edited by Dr. Bowdler Sharpe. The work, which is a royal quarto, will contain coloured figures of all the known species, about 150 in number. Dr. Sharpe, we understand, has also just completed a work on the 'Eggs of British Birds,' left unfinished by Mr. Seebohm. This will shortly be published by Messrs. Pawson and Brailsford, of Sheffield.

Remains of the Great Auk in Ireland.—The May number of the 'Irish Naturalist' (vol. v. p. 121) contains an article by Mr. G. E. H. Barrett-Hamilton which brings to our notice a statement of Mr. W. J. Knowles, in his "Third Report on the Prehistoric Remains from the Coast of Ireland" (Proc. R. I. A. (3) iii. pp. 650-663), that he had obtained on the coast of Antrim bones which had been identified by Mr. E. T. Newton with those of the Great Auk (*Alca impennis*). These bones were found in the sandhills of Whitepark Bay, Antrim, in conjunction with human remains believed to be of the Neolithic Period. From the

number of bones found it is inferred that at that period the Great Auk must have been a common inhabitant of the North of Ireland.

Nesting of Rupicola crocea in Guiana.—On his recent excursion to the Pizara River in the interior of British Guiana (see 'Timehri,' new ser. vol. ix. p. 231, 1895), Mr. C. A. Lloyd visited a nesting-place of the Cock-of-the-Rock (*Rupicola crocea*), which he describes as follows:—"Soon after this we fell in with a young Indian and his wife, the latter carrying a 'quake' containing a beautiful male Cock-of-the-Rock (*Rupicola crocea*) in splendid plumage, which we offered to purchase, but which she refused to sell. She told us, however, that we could secure the birds in great numbers hard by, and that this month (March) was their nesting-season. We decided on camping at a settlement not far off to try and procure specimens, with their nests and eggs. Accordingly, on reaching the village, we halted for the balance of the afternoon, and, in company with one of our men, started off at once in search of their building-place, which we soon found, and succeeded in taking a couple of nests. They each contained two speckled eggs, a little larger than those of a Pigeon. The nests are placed on the bare rocks, and constructed of palm-fibres stuck together by a kind of gum. These were the only two nests that we found with eggs, although we saw many deserted ones. The birds feed on the fruit of a palm, which seems to be a species of *Ænocarpus*, and, judging from their harsh cries around us, they must have been very plentiful, but we never caught sight of one. The Macoushis call the bird *Kavanaru*."

Waders in the Zoological Society's Fish-house.—The compartment fitted up for Waders in the Zoological Society's Fish-house is now of an attractive character to the ornithologist. There may be seen Knots, Grey Plovers, Golden Plovers, Redshanks (both Common and Spotted), Ruffs, and

Dunlins, most of them more or less assuming their summer dresses. The gem of the collection is perhaps a Spotted Redshank (*Totanus fuscus*), which is now nearly in full summer plumage, and is rarely seen alive in this stage. A pair of Pratincoles stand guard over their eggs in a safe corner of the cage, and are now sitting by turns. It is not known that this shy bird has ever previously bred in captivity.

The new Extinct Gigantic Bird of Australia.—We are still without further information about the new extinct gigantic bird of the Diprotodon-beds of Lake Callabonna, of which Dr. Stirling published a preliminary notice in 'Nature' nearly two years ago (see 'Ibis,' 1894, p. 577). It is rather hard on ornithologists that Dr. Stirling should keep us waiting so long and not have given us even a name by which we may call this extraordinary object. Australian naturalists who have been recently in England speak of the remains as being most remarkable from their size and general appearance.

Death of Lord Lilford.—With the greatest regret we have received, just as we are finishing the present number of our Journal, the sad intelligence of the death of the President of the British Ornithologists' Union. Lord Lilford, who had been ailing seriously for some time past, but was supposed within the last few days to be progressing more favourably, was seized with an attack of syncope yesterday, June 17th, and expired rather suddenly. We shall give some particulars of our late President's life and labours in the next number of 'The Ibis,' and for the present will only say that his loss will be deeply felt, not only by the Members of the Union, but also by many friends and correspondents in all parts of the world.—(June 18th, 1896.)

THE IBIS.

SEVENTH SERIES.

No. VIII. OCTOBER 1896.

XXXIX.—*A List of Birds collected or observed on the Lower, Southern, and South-western Slopes of the Volcano of Miravalles and on the lower lands extending to Bagaces in Costa Rica, with a few Observations on their Habits.*
By C. F. UNDERWOOD*.

FROM the beginning of August 1895 till the end of December of the same year, accompanied by my brother and my museum assistant, I was collecting in the vicinity and on the lower slopes of Miravalles, extending my trips also, occasionally, to Bagaces.

To reach our destination our route lay up the Gulf of Nicoya, then up the River Tempisque, branching off into the "Rio de las Piedras," and up until this river is joined by the River Señorío Grande. In the fork of these two rivers is situated the little town of Bebedero. Here we landed some twenty-one hours after leaving Puntarenas, our trip being made, part of the distance in the small mail-steamer, and partly in a dug-out canoe. Our equipage was heavy and the canoe small, the gunwale being but a few inches above the water, which accounted partly for our low speed.

* [This paper was sent by the authorities of the National Museum of Costa Rica to me, and I have since seen a portion of Mr. Underwood's collection. I am thus in a position to make the few supplementary notes which will be found below, with my initials.—O. SALVIN.]

From Bebedero, which is but little above sea-level, one begins to ascend gradually, until Bagaces is reached after some three hours' horseback travelling, the estimated altitude of this village being some 210 feet. From there to the dwelling-house of the hacienda Miravalles the ascent becomes more apparent, and in four hours—the time the journey usually occupies—one reaches approximately 1450 feet.

In my excursions I rarely climbed more than about another 500 to 800 feet; therefore the locality denominated “Miravalles” on my labels can be estimated as varying between 1400 to some 2000 feet above the sea-level.

TURDIDÆ.

† CATHARUS MEXICANUS, Bp.

Only one taken, shot in the deep forest.

TURDUS MUSTELINUS, Gm.

One taken, no more seen.

TURDUS USTULATUS, Nutt.

Only one secured.

TURDUS TRISTIS, Sw.

Abundant in the forest, feeding on the fruit of the *Higueron* and other trees. Somewhat wild, seeming to perceive one from a long distance.

† TURDUS GRAYI, Bonap.

Now and again observed near habitations, but not by any means common. Native name “Yigüirro.”

SYLVIIDÆ.

POLIOPTILA ———? *

A very common bird, frequenting trees in comparatively open country and scrubs, in preference to virgin forest. I have found it equally as common in Bebedero and Bagaces as on Miravalles.

* [Specimens of both *P. bilineata* and *P. albiloris* are in the collection sent, and it becomes more than doubtful if these birds can still be kept separate.—O. S.]

TROGLODYTIDÆ.

+ CAMPYLORHYNCHUS CAPISTRATUS (Less.).

Very abundant in the *piñuelos* forming the hedges enclosing fields, both in the upper and lower lands. The native name is "Salta-piñuelo" (piñuelo-jumper).

+ HENICORRHINA LEUCOPHRYS, Tsch.

Not uncommon in virgin forest; it is a silent bird, generally preferring the thick under-brush.

+ THRYOPHILUS PLEUROTICTUS (Sel.).

Rather plentiful in hedges and the scrubby foliage dotting open spaces.

+ SALPINCTES GUTTATUS, Salv. & Godm.*

In the forest-bordered pasture-grounds of Miravalles one sees, dotted here and there, collections of lichen-covered boulders. The first specimen of this bird that I shot was perched on one of these stone piles. It was strange to me, and I searched carefully for more, but found it rare; however, I succeeded in getting three or four others myself, and had one or two brought me by a native hunter, whom I had instructed where to look for it. All of them were taken on these stone heaps, nor have I seen them elsewhere.

MNIOTILTIDÆ.

MNIOTILTA VARIA (Linn.).

Common in all parts.

HELMINTHOPHAGA CHRYSOPTERA (Linn.).

One taken.

DENDRÆCA ÆSTIVA (Gm.).

Common everywhere.

DENDRÆCA PENNSYLVANICA (Linn.).

Common.

DENDRÆCA BLACKBURNIÆ (Gm.).

One specimen taken.

* [Mr. Underwood's specimens agree with the birds from the Volcan de San Miguel, Salvador, described in 'The Ibis' for 1891, p. 609. —O. S.]

SEIURUS AURICAPILLUS (Linn.).

Found feeding on the ground in the forest; rather common.

SEIURUS NOVEBORACENSIS (Gm.).

Not so common as *S. auricapillus*; one specimen only procured.

OPORNIS FORMOSA (Wils.).

A forest lover.

+ GEOTHLYPIS CANINUCHA, Ridgway.

Plentiful in the natural *potreros*, or pasture-grounds, and swamps, dodging in and out of the long grass.

MYIODIOCTES CANADENSIS (Linn.).

Common.

† BASILEUTERUS CULICIVORUS (Licht.).

One of the commonest Warblers, seeming to confine itself, however, to the forests.

BASILEUTERUS LEUCOPYGIUS, ScL. & Salv.

Now and again observed by the riversides; not common.

BASILEUTERUS MESOCHRYsus, ScL.

Common in the open and outskirts of the forest.

SETOPHAGA RUTICILLA (Linn.).

Seems to be common.

VIREONIDÆ.

VIREO OLIVACEUS (Linn.).

Common.

VIREO FLAVOVIRIDIS (Cassin).

Plentiful in second-growth forest. Native name "Faile."

VIREO PHILADELPHICUS (Cassin).

Fairly plentiful.

VIREO FLAVIFRONS, Vieill.

A few examples procured on the outskirts of the forest.

HYLOPHILUS DECURTATUS (Bonap.).

Common from Miravalles to Bebedero.

HYLOPHILUS OCHRACEICEPS, ScL.

Prefers the forest; not nearly so common as *H. decurtatus*.

HIRUNDINIDÆ.

HIRUNDO ERYTHROGASTER (Bodd.).

One shot on the wing between Bagaces and Miravalles.

CEREBIDÆ.

† **CHLOROPHANES SPIZA** (Linn.).

Several seen and taken.

† **CEREBIA CYANEA** (Linn.).

Various taken. Native name "Picudo."

TANAGRIDÆ.

EUPHONIA AFFINIS, Less.

Common.

EUPHONIA HIRUNDINACEA, Bonap.

Taken in company of *E. affinis*, feeding on fruit.

TANAGRA CANA, Sw.

Nothing near so common as in the interior. Native name "Viuda" (widow).

PIRANGA RUBRA (Linn.).

Common. Native name "Cacique."

† **PHÆNICOTHTRAUPIS VINACEA**, Lawr.

Common in Miravalles. A very noisy bird, found in the thick forests in small bands searching for insects.

† **EUCOMETIS SPODOCEPHALA** (Bonap.).

Found from Bebedero up to the highest point at which I collected. In Miravalles it is much more plentiful than lower down. Generally seen in bands of four or five, also seen frequently along with *Phænicothraupis vinacea* in those constantly moving columns of birds composed of Tanagridæ, Formicariidæ, Dendrocolaptidæ, and others, that make the woods seemingly all at once resound with their notes, and then pass almost as suddenly away, leaving the spot silent as before.

ARREMON AURANTHIROSTRIS, Lafr.

Rather uncommon; seen principally on outskirts of forest in the under-brush.

SALTATOR MAGNOIDES, Lafr.

Common from here to Bebedero.

FRINGILLIDÆ.

AMAUROSPIZA CONCOLOR, Cab.*

Two specimens procured on the forest edge; no others noticed.

GUIRACA CÆRULEA (Linn.).

Rarely met with; only three specimens procured.

GUIRACA CONCRETA (Du Bus).

But one specimen procured.

CYANOSPIZA CIRIS (Linn.).

Two specimens taken near Bagaces and one in Miravalles. In the former district I saw various others.

COTURNICULUS PASSERINUS (Wils.).

Found in open savannas; not uncommon.

! HÆMOPHILA RUFICAUDA (Bonap.).

Not particularly common; habits similar to those of *Embernagra superciliosa*, and seen occasionally in its company searching for insects on the piñuclos (*Bromelia pinguin*). Specimens taken in Miravalles, Bagaces, and Bebedero.

HÆMOPHILA RUFESCENS (Sw.).

But few specimens secured; does not appear common; these were taken at forest borders and scrubs.

EMBERNAGRA SUPERCILIOSA, Salv.

In Miravalles not uncommon; seen on the outskirts of forest and in second-growths, always near the ground; found by the roadside leading to Bagaces and Bebedero.

EMBERNAGRA STRIATICEPS, Lafr.

Not nearly so common as *E. superciliosa*; this is taken also in Bagaces. A lover of second-growth woody lands,

* [A specimen sent doubtless belongs to this rare species.—O. S.]

borders of forest, and hedges of piñuelo; like *E. superciliosa* seldom seen in the thick forest.

SPIZA AMERICANA (Gm.).

Three examples of this bird taken.

ICTERIDÆ.

GYMNOSTINOPS MONTEZUMÆ (Less.).

Several specimens taken at highest point of my rambles. Known by the natives as "Oreopendula."

+ *STURNELLA MAGNA* (Linn.).

Plentiful in "zacatales" (stretches of land covered with long wild grass). Goes by name of "Zacatero."

ICTERUS BALTIMORE.

Common from Bebedero to Miravalles. Native name "Cacique veranero."

+ *ICTERUS PECTORALIS* (Wagl.).

Specimens procured were shot near Bagaces in trees dotting swampy potreros, accompanied by *I. pustulatus*; taken also in Bebedero. Native name "Chiltote."

CORVIDÆ.

+ *PSILORHINUS MEXICANUS*, Rüpp.

Not so common as the following species. Its place seems to be usurped by the blue species.

+ *CALOCITTA FORMOSA* (Sw.).

In habits it seems to resemble *Psilorhinus mexicanus*, even the note is very similar, though easily distinguishable.

TYRANNIDÆ.

+ *PLATYRHYNCHUS CANCROMINUS*, Sel.

Not uncommon in the thick forests, fearlessly alighting within a yard or so of the observer.

+ *RYNCHOCYCLUS CINEREICEPS*, Sel.

Several seen and taken.

+ *TODIROSTRUM CINEREUM* (Linn.).

Fairly common; seen everywhere between here and Bebedero.

+ ONCOSTOMA CINEREIGULARE, Scl.

Common; in habits similar to *Platyrhynchus cancrominus*.

+ MIONECTES OLEAGINUS (Licht.).

Some few examples procured.

+ ELAINEA PLACENS, Scl.

Several procured; prefers the open.

+ MYIOZETETES SIMILIS (Spix).

Common from Bebedero to Miravalles.

+ MYIODYNASTES LUTEIVENTRIS, Bonap.

Common.

+ MYIODYNASTES AUDAX (Gm.).

Common.

+ MEGARHYNCHUS PITANGUA (Linn.).

Common.

+ MUSCIVORA MEXICANA, Scl.

Miravalles is the only place in which I have seen this bird at all plentiful. Its extreme tameness and familiar cry render it conspicuous and an easy prey. Native name "Rey de los traga-moscas" (King of the Flycatchers).

+ MYIOBIUS SULPHUREIPYGIUS (Scl.).

Not uncommon.

+ CONTOPUS BOREALIS (Sw.).

One specimen procured in a patch of forest, a favourite hunting-ground of mine. There was an open spot where some trees had been felled, and whenever I happened to be in the neighbourhood I made a point of visiting it, and going straight to a certain tree looked for a particular dry twig, and there nearly every time I observed a *Contopus*.

This specimen was taken on the afore-mentioned twig, and was the only one secured by me during my stay in Miravalles.

+ TYRANNUS MELANCHOLICUS (Licht.).

As in most places, common in open country and by the roadside.

+ *MILVULUS TYRANNUS* (Linn.).

Few seen.

+ *MILVULUS FORFICATUS* (Gm.).

This species I found in November and December very abundant in Bagaces and its vicinity, where numbers could be seen in the air or perched on the telegraph-wires, but in Miravalles it was rather uncommon.

PIPRIDÆ.

+ *PIPRA MENTALIS*, Scl.

One female taken; no others observed.

+ *PIPRA LEUCORRHOEA*, Scl.

Two or three specimens taken; few others seen.

+ *CHIROXIPHIA LINEARIS* (Bonap.).

This is the commonest of the Pipridæ, a very conspicuous bird. On account of its note it is called by the natives "Toledo."

+ *HETEROPELMA VERÆ-PACIS*, Scl.

In Miravalles quite rare; my specimens were shot in the deepest forest.

COTINGIDÆ.

+ *TITYRA SEMIFASCIATA* (Spix).

Seen occasionally, but cannot be called abundant. Natives call it "Pajaro-chancho" (Pig-bird) on account of its note, which somewhat resembles the grunting of that animal, but in a higher key.

+ *AULIA RUFESCENS* (Scl.).

Only one specimen procured; apparently a very rare bird.

+ *LIPAUGUS HOLERYTHRUS*, Scl.

Several specimens procured, but not by any means common.

+ *ATTILA SCLATERI*, Lawr.*

Occasionally seen in the thick forests, but not abundant.

* [The specimens sent most resemble *A. sclateri*, but they vary a good deal *inter se*.—O. S.]

DENDROCOLAPTIDÆ.

XENOPS GENIBARBIS, Ill.

Common, extending its range to Bebedero.

SCLERURUS GUATEMALENSIS (Hartl.).

In Miravalles very rare.

DENDROCINCLA HOMOCHROA (Scl.).

This and *Picolaptes compressus* are about the commonest of the Dendrocolaptidæ found in Miravalles, both being met with in company with various other species of same family and of the Formicariidæ, following up the columns and feeding on the black migratory ant.

SITTASOMUS OLIVACEUS, Wied.

Common in Miravalles.

DENDRORNIS NANA (Lawr.).

Rare.

DENDRORNIS LACRYMOSA, Lawr.

Rare ; only one taken.

PICOLAPTES COMPRESSUS (Cab.).

Quite common.

DENDROCOLAPTES SANCTI-THOMÆ, Lafr.

Not uncommon.

FORMICARIIDÆ.

THAMNOPHILUS DOLIATUS (Linn.).

Common up to Bebedero.

DYSITHAMNUS STRIATICEPS, Lawr.

Very rare ; specimens procured in thickest part of forest.

CERCOMACRA TYRANNINA, Scl.

Common in Miravalles.

RAMPHOCÆNUS RUFIVENTRIS, Bonap.

Not common.

, HYPOCNEMIS NÆVIOIDES.

The most common species of the Formicariidæ in Miravalles.

+ *FORMICARIUS UMBROSUS*, Ridgway.

Not very common, but by its peculiar cry, not unlike that of some of the members of the Quail family, one can easily follow it up, and by imitating it bring it quite close. On the slightest alarm the call ceases, and a few minutes afterwards it is again heard, but at a long distance.

The bird runs along the ground like a Quail or Ground-Dove, feeding on insects, and is of solitary habits and only found in the densest forest.

+ *PHLOGOPSIS MACLEANNANI*, Lawr.

Quite rare; but four specimens procured. These were shot in the act of feeding, on the ground or on stumps and branches near it.

TROCHILIDÆ.

CHLOROSTILBON CANIVETI, Less.

Quite common on edges of forests, gathering honey or insects from blossoming plants near the ground.

+ *AMAZILIA CINNAMOMEA* (Less.).

Quite plentiful on the savannas in Miravalles; also observed near Bagaces.

+ *AMAZILIA ALFAROANA*, sp. n.

Similar to *A. sophie*, but larger and the bill rather longer and more curved. On the underside there is little difference, but the under tail-coverts are dark steel-blue, with a narrow white margin. On the upper surface the green of the plumage has a distinct blue tint, which becomes more intense on the crown and forehead. The upper tail-coverts are as in *A. sophie*. The mandible is pale for about its basal half, the rest and the maxilla black. Total length about 1·0 inches; wing 2·2; tail—outer rectrices 1·35, middle rectrices 0·25 shorter; bill 1·0*.

Something unfamiliar about this bird induced me to shoot

* [I have compared the specimen sent with *A. sophie* and with *A. cyanura*, which it also resembles, but it differs from the latter in the absence of the characteristic chestnut colour of the wings. The species is quite distinct so far as I can see.—O. S.]

it; it was the only specimen that I was able to procure, and was taken at a pretty high point. I dedicate this species to Don A. Alfaro, the Director of the National Museum of Costa Rica.

AMAZILIA RIEFFERI (Bourc.).

Specimens taken in Miravalles and Bagaces.

AMAZILIA SOPHIÆ, Bourc. & Muls.

Specimens from Miravalles and Bebedero.

FLORICOLA CONSTANTI (Delattre).

Two specimens procured, one in Miravalles and the other lower down.

PHAËTHORNIS LONGIROSTRIS, Less.

Some few specimens taken in the forest; however, not very abundant.

PYGMORNIS ADOLPHI (Gould).

Few seen and collected. Observed on edges of forest under same conditions as *Chlorostilbon caniveti*.

TROCHILUS COLUBRIS.

Only near Bagaces did I procure specimens of this bird, where I found it of an evening, going, bee-like, from flower to flower of small blossoming plants.

CAPRIMULGIDÆ.

NYCTIDROMUS ALBICOLLIS (Gm.).

This bird is common at all parts from Miravalles to Bebedero.

CHORDEILES TEXENSIS, Lawr.

At a spot called Salitral, between Miravalles and Bagaces, one afternoon I observed a number of these birds flying round a ranch where I intended to pass the night; from these I secured my specimens: at first they were observed at quite an elevation, but as it got later they gradually descended.

PICIDÆ.

† MELANERPES HOFFMANNI (Cab.).

As common here as in San José. Native name for this family of birds "Carpintero" (carpenter).

† CAMPEPHILUS GUATEMALENSIS (Hartl.).

Seems to be fairly plentiful.

MOMOTIDÆ.

† MOMOTUS LESSONI, Less.

Not so common here as in the interior. Known over the country by the name of "Bobo."

† EUMOMOTA SUPERCILIARIS (Jard. & Selby).

I looked carefully for this bird in Miravalles, but was unable ever to see a single specimen; lower down, however, near Bagaces, it is not uncommon, and in Bebedero it is quite abundant.

PRIONORHYNCHUS PLATYRHYNCHUS (Leadb.).

But one specimen procured.

† HYLOMANES MOMOTULA, Licht.*

The birds labelled as such I think to be of this species; they are the first examples, I believe, on record from Costa Rica. I hunted carefully for other specimens, but was unable to procure more than three altogether, one of which remains in the collection of the Museo Nacional of Costa Rica.

ALCEDINIDÆ.

CERYLE SEPTENTRIONALIS, Sharpe.

Fairly abundant in Miravalles.

TROGONIDÆ.

† TROGON ELEGANS, Gould.

This family of birds are known in this part of the country as "Viuda," the appellation of the Blue Tanager (*Tanagra cana*) in the interior.

* [These specimens agree very closely with others from Mexico and Guatemala. The chestnut of the nape is slightly more diffused.—O. S.]

I looked specially for this species in Miravalles as much as I looked for *T. aurantiiventris* at Bagaces, but these two species seem to adhere strictly to their respective elevations.

TROGON AURANTIIVENTRIS, Gould*.

Only taken in Miravalles, and the specimens procured were the result of diligent search, as they are not by any means common. I found them to be the wildest of the Trogons inhabiting these parts, hardly allowing one to get within gun-shot.

TROGON ATRICOLLIS, Vieill.

Commonest in lower regions.

└ TROGON MELANOCEPHALUS, Gould.

In Miravalles rarely seen, but as one approaches Bagaces it gradually becomes more plentiful; however, I have taken specimens at the highest point of collecting.

TROGON CALIGATUS, Gould.

Like *T. atricollis*, commoner in lower regions.

TROGON MASSENA, Gould.

Four specimens taken in Miravalles; no others observed.

BUCCONIDÆ.

MALACOPTILA PANAMENSIS, Lafr.

Very few specimens observed in Miravalles; two specimens procured.

CUCULIDÆ.

| CROTOPHAGA SULCIROSTRIS, Sw.

At almost all parts of the country, at almost all elevations, so soon as there are signs of cultivation and clearings made for the cattle, the familiar cry of these birds is heard.

| MOROCOCCYX ERYTHROPYGIA (Less.).

Seems to show no preference for one point to another between Bebedero and Miravalles.

* [The birds sent by Mr. Underwood are of a deep orange-red, and are intermediate between *T. puella* and *T. aurantiiventris*.—O. S.]

† NEOMORPHUS SALVINI, Scl.*

During my stay at Miravalles I observed only about four of these birds, of which I managed to secure two. It is only seen in the deep forest, hopping, Cuckoo-like, on or near the ground. The natives in these parts firmly believe that wherever this bird is found, a "leon," as the puma is called all over Costa Rica, is near at hand; hence the native name, "Guia-leon" (Guide to the lion).

RHAMPHASTIDÆ.

+ RHAMPHASTOS CARINATUS, Sw.

This bird I have taken generally in the same localities as *R. tocard*; but in Miravalles not a single specimen of the latter did I observe, although nowhere did I see *R. carinatus* so common as in Miravalles. Its familiar name is "Cuni."

+ PTEROGLOSSUS TORQUATUS (Gm.).

Not so common here as lower down.

PSITTACIDÆ.

+ ARA MACAO (Linn.).

Common.

+ BROTOGERYS TOVI (Gm.).

Flocks of these birds are constantly heard passing from one place to another; equally abundant in Bebedero.

+ CONURUS CANICULARIS (Linn.).

Not so common here as *B. tovi*.

+ CHRYSOTIS ALBIFRONS (Sparrm.).

Plentiful, feeding on the fruit of the "guagabo" (guava), an abundant tree in Miravalles, where it dots the pasture-grounds, and is preserved, as the cattle are very fond of the fruit.

CHRYSOTIS AUROPALLIATA (Less.).

Very rare so high up; in fact I only remember seeing some three or four pairs flying over the whole time I was

* [Recorded from Nicaragua, but not before noticed in Costa Rica.—O. S.]

there. But, on the other hand, in Bagaces these Parrots are extremely abundant, and regularly make the town their headquarters; in fact the traveller arriving there a little before sunset is often deafened by their noise, and on his first visit is amazed at the strange scene. From all sides arrive innumerable bands and solitary pairs of "Loros" (the Spanish name), which remain for about an hour squabbling and fighting, constantly changing their perches before going to roost in the low trees in the immediate vicinity of the houses. "Supas" (Macaws) also make the town their roosting-quarters. At daybreak there is a repetition of the noise; they then go off to their various feeding-grounds.

The natives here appreciate a good talking Loro as a pet as much as Europeans do. The young are eagerly sought after, and the birds, when they begin to talk, which is generally at about a year old, sell for fairly good prices. This species seems to be by far the most easily taught.

FALCONIDÆ.

FALCO SPARVERIUS, Linn.

The Hawks do not appear so abundant in the high as in the lowlands, although there are few localities where this species at least is not found abundantly. It is the commonest species here.

†POLYBORUS CHERIWAY (Jacq.).

Several seen on the savannas, feeding, I should judge, on worms and insects; also observed in company of *Cathartes atratus* in the vicinity of carcasses of horses or oxen.

†SPIZAËTUS ORNATUS (Daud.).

One or two specimens procured; one disturbed in his repast off a squirrel, which, however, he took away with him in his flight.

CATHARTIDÆ.

†GYPAGUS PAPA (Linn.).

Several seen. Called "Rey de los Zopilotes" (King Vulture).

+ *CATHARTES ATRATUS* (Bartr.).
Common. Called "Zopilote."

+ *CATHARTES AURA* (Linn.).
Not so common as *C. atratus*.

COLUMBIDÆ.

+ *COLUMBA RUFINA*, Temm.

One of the most abundant Pigeons of Miravalles. Of an afternoon one would see numbers of them conspicuously seated on the highest branches of the trees, standing out in relief against the sky.

+ *LEPTOPTILA VERREAUXI* (Bonap.).
Common in second-growth woods.

+ *LEPTOPTILA CASSINI* (Lawr.).

A good many met with in the forests on the ground. At one's approach they would get up and fly to a short distance, when one could then generally get quite near them.

+ *PERISTERA CINEREA* (Linn.).
Few seen.

+ *CHAMÆPELIA PASSERINA* (Linn.).
Very common, especially on the road leading to Bagaces.

+ *MELOPELIA LEUCOPTERA* (Linn.).
Very common by the roadside, where they can be seen in flocks feeding on the ground, at which times I have got as many as a dozen at a shot. They are commonest in the neighbourhood of Bagaces and between there and Bebedero.

+ *ZENAIDURA CAROLINENSIS* (Linn.).
Plentiful everywhere between Miravalles and Bebedero.

+ *GEOTRYGON MONTANA* (Linn.).
Four specimens shot in thick forest. Not at all abundant.

+ *GEOTRYGON VIOLACEA*, Temm.*
(Brilliant purple-black.) Quite rare. The specimens were taken at one of the highest points of my rambles. In

* [New to Costa Rica, but found in the State of Panamá.—O. S.]

the thick woods some were shot feeding on the ground and others in low branches. Seen in small flocks of four or six.

CRACIDÆ.

+ PENELOPE CRISTATA (Linn.).

Plentifully seen in the jobo trees, and also on the ground, feeding on the fallen fruit of the same tree.

+ ORTALIS CINEREICEPS (Gray).

Not common; some four specimens procured. These birds, unlike the other "Pavas," as birds of this family are called, though particularly noisy at other times, generally remain quiet in the trees when one is searching for them, or at least do not hurry to escape, unless thoroughly aroused.

I have once or twice seen a party of four or six, and having shot one, have hunted round for the others, and have only discovered them after a long search, and then perhaps I have descried one or two motionless just over my head. "Chachalaca" is the native name for this bird.

+ CRAX GLOBICERA, Linn.

This bird, the native name of which is "Pavon," is quite common, although perhaps rather scarcer than *Penelope cristata*. They both are noisy birds, and generally the first intimation of their presence is given by their loud hoarse cry, which suddenly breaks the stillness of the forest as they get themselves quickly to a distance; their wings sound in the air and against the twigs as they heavily rise from the ground.

I shot once at a *P. cristata* and stunned it somewhat, a pellet just grazing its skull. I caught it before it could recover itself and take wing. After a few days it became quite tame. The natives when they come across eggs of either "Pavon" or "Pava," take them home and hatch them under a domestic hen. The birds are hardy and thrive well in captivity. We have had a couple of *C. globicera* for about five years confined in an aviary at the museum.

PERDICIDÆ.

†EUPSYCHORTYX LEYLANDI (Moore).

This "Codorniz" (Quail), as it is known all over the country, is the commonest of the family. Their well-known cry is heard in the fresh of the morning as one passes patches of second-growth woods, and the bird itself seen, either perched on a stone or stump or running into hiding.

†ODONTOPHORUS MELANOTIS, Salv.

Only one specimen secured; no others seen.

TINAMIDÆ.

TINAMUS ROBUSTUS.

One procured, but very few seen; a very shy bird and very difficult to shoot. One occasionally comes across it in the deep forest, but a passing glance at a distance is all one usually gets of it.

†CRYPTURUS BOUCARDI (Sallé).

Very rare, but one specimen procured.

CHARADRIIDÆ.

ÆGIALITIS VOCIFERA (Linn.).

Occasionally observed.

SCOLOPACIDÆ.

TOTANUS SOLITARIUS.

As in most parts of Costa Rica, one notices it in swampy places and beside rivers.

ACTITIS MACULARIA (Linn.).

Also seen, but not so common as the former.

CICONIIDÆ.

TANTALUS LOCULATOR, Linn.

Several noticed in the lagoons in company of various Herons. Common name of this bird "Garzon."

† MYCTERIA AMERICANA, Linn.

I occasionally saw these big birds in lagoons. They generally go in pairs, and can be seen daily at the same spot. The native name is "Galan sin ventura" (The luckless Gallant).

PLATALEIDÆ.

† AJAJA ROSEA, Reichenb.

One or two seen now and again in the lagoons, but they rarely come so high up, remaining, as a rule, in the rivers near the coast. "Garza morena" is the inappropriate name given it, and literally means Brown Heron.

ARDEIDÆ.

ARDEA EGRETTE, Gm.

Abundant about the lagoons.

ARDEA CÆRULEA, Linn.

Seen plentifully in same localities.

BUTORIDES VIRESCENS (Linn.).

Occasionally seen. Birds of this family are commonly called "Garzas"—"Garza blanca" (White Heron), "Garza pequeña" (Small Heron), &c.

TIGRISOMA CABANISI, Heine.

Generally observed solitary by the riversides and in secluded parts of lagoons.

ARAMIDÆ.

† ARAMIDES PLUMBEICOLLIS, Zeledon.

Two specimens procured; only one other seen: they are very tame, allowing one to approach quite close.

ANATIDÆ.

† DENDROCYGNA AUTUMNALIS (Linn.).

This and the following are the common Ducks that one finds abundantly in the lagoons and by the riversides all the way from Bebedero to Miravalles, although this species prevails in numbers.

+CARINA MOSCHATA (Linn.).

This Duck, unlike *Dendrocygna autumnalis*, is difficult to rear in captivity, always escaping at the first opportunity. The former, however, is very easily domesticated, going off repeatedly on visits to the lagoons; but it does not appear at all anxious to remain there, as it returns generally the day after.

XL.—*On the Change of Birds to Spring Plumage without a Moul.* By JOHN GUILLE MILLAIS.

(Plate X.)

IN the 'Bulletin of the American Museum of Natural Science' (vol. viii.), Mr. J. A. Allen has recently published a series of articles on "the alleged Changes of Colour in the Feathers of Birds without Molting" [*sic*], in which he seriously impugns the accuracy of statements made by many naturalists of repute. In so doing he is rather dogmatic; for instance, when he sums up Yarrell's researches respecting the spring change of the Golden Plover as, "of course, pure inference, based on lack of knowledge on the condition of the plumage on the Plover's breast in normal breeding condition."

Seeing that Mr. Allen brings no proof to back up his statement that the feather, after being once complete, becomes exhausted and falls like a leaf from a tree, it seems hardly necessary to argue upon a question which microscopic research, on a thoroughly scientific basis, will alone be capable of solving. I shall therefore simply give a short review of my own studies on the subject of spring feather-change.

It has always seemed to me a curious fact that more British ornithologists have not turned their attention to the change of plumage in birds, since the field is so wide and the subject so unhackneyed. All the adult stages are now well shown in their full plumages by the excellent illustrations we have in modern publications; but the transition from youth to maturity, and the phases of plumage which even the old bird goes through during the several seasons, and

the manner in which these are effected, form a subject which few naturalists have studied. The reason of this is probably that none except the field-naturalist, who obtains fresh specimens in the flesh and examines them at all seasons, can correctly grasp the case, for, with some exceptions (as in the *Limicolæ* and *Gaviæ*), the feather-casting of birds in confinement is very irregular, owing to improper feeding and want of exercise.

For over twenty years, during which I have collected in all parts of the British Islands, I have made "the change-of-plumage question" a special study. In my opinion there is nothing more interesting than the discovery of links in the chain of evidence which goes to show the life-history of any one species whose change of dress is at all elaborate. In some birds, like the Goldeneye, Sheld-duck, Eider, Long-tailed Duck, Gannet, Great Black-backed and Herring Gulls, &c., we see a great number of gradual changes taking place before the adult plumage is reached, lasting, in some cases, five years; whilst the reasons which govern the seasonal changes of adult Grouse, Waders, and others are by no means easy to determine without a very great deal of close observation and study.

Putting aside the question of immature plumages, let us now look at the laws that govern those birds which make an annual change from the winter garb to the summer breeding-dress. We find that this great change, with the exception of perching-birds, takes place in one of the three following methods:—

(I.) By a nearly complete moult.

(II.) By a partial moult, in which the old winter feathers are replaced by new summer ones, and by many of the old winter feathers themselves changing colour.

(III.) By a complete recoloration of the feathers in new form throughout the whole plumage, only a few being moulted and replaced by new summer ones.

Taking these three methods in the order in which they come, the species which will be found to follow method No. I. are practically but few, of which the Long-tailed Duck

(*Harelda glacialis*) is a good example. This handsome and sprightly Duck is a regular winter visitor to our northern coasts, and frequently remains in the vicinity of the Orkney and Shetland Islands till the breeding-dress is assumed. During the winter the birds move about in flocks (from 20 to 100 in number), which in March become more scattered, the birds then often being seen in pairs. Birds of this species are, however, as I think, never paired until they reach their breeding-ground near the Arctic Circle, for at the beginning of April they hold regular courting-parties, as other Ducks do. This is probably pseudo-erotic, as the whole of the birds leave in big parties for the northern regions about ten days later. In some seasons adverse northern head-winds delay them, and their journey may be deferred till the beginning of May. When this happens, though the birds become extremely restless and shy, it is possible to obtain specimens which show the complete summer dress fully developed. In the spring of 1886 I was fortunate enough to obtain a fine series of this Duck on Loch Stennis and the adjoining bays of Pomona (Orkneys). By the examination of these freshly-killed specimens it was plain that all the russet-and-black feathers of the head and neck were new ones, and could be distinctly seen coming from the new quills, whilst the old light feathers of the winter plumage would come off in the hand on being stroked. In one or two cases the long feathers of the wing-coverts showed an old winter feather in process of change to summer colour. This, however, I regard as exceptional, for the scapulars are also generally shed, whereas the feathers of the wings, tail, and many of those of the breast and back are not cast.

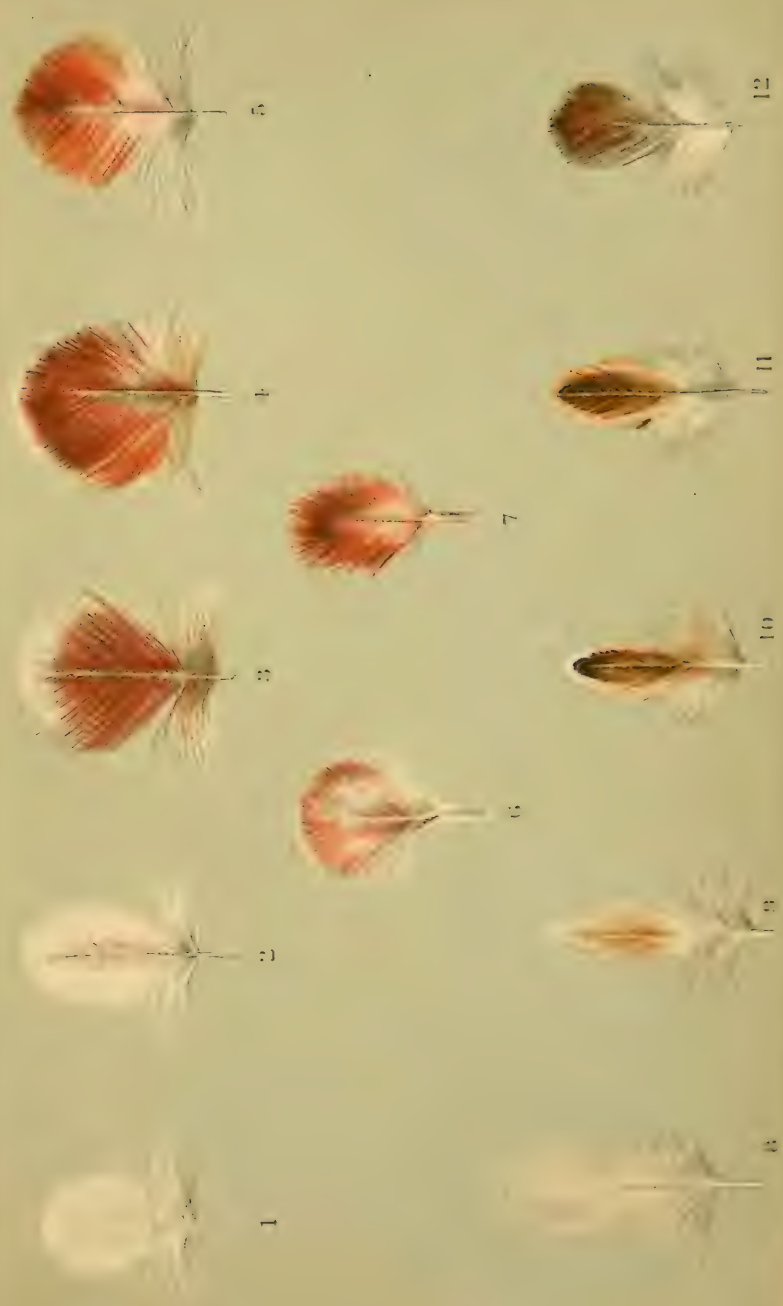
It is hardly necessary to give any illustration of this, which is the simplest of all changes of plumage, for, assuming that the reader is familiar with the Long-tailed Duck in its summer and winter dress, he has only to imagine the winter feathers being gradually cast (the last to change, curiously enough, being the top of the head) and the summer ones taking their place.

Next we come to method No. II., wherein we notice a bird assuming its summer dress by means of a partial moult, and also by many of the old winter feathers themselves changing colour.

Amongst birds that may be said to have a distinct summer plumage, this is, perhaps, the commonest form of change, of which the families of the Grouse and Grebes are good examples. But, inasmuch as a bird like the Ptarmigan shows the change more slowly and far more elaborately, the case of the Slavonian Grebe (*Podiceps auritus*) is quicker and simpler.

In the spring of 1886 I was equally fortunate in obtaining a fine series of Slavonian Grebe in process of change and in full summer plumage. Unlike the case of the Long-tailed Duck, which, one may say, stays late on our coast one season in every four, the Slavonian Grebes turn northward very regularly, passing the Orkneys, generally without stopping, at the end of March. Only once before has Mr. Begg, the old Stromness naturalist, known the Slavonian Grebes to have been blocked, as they were in 1886, by adverse winds. I found them very shy, as all water-birds are when in course of actual migration, and I had to exercise the greatest caution in sailing down on one of them, for they were generally alone. Unless a bird is actually feeding, it can seldom be approached nearer than 100 yards, while, under any circumstances, if a Shag or a Black Guillemot rose within any distance at which it could be plainly seen, the Grebe would get up at once and fly out of sight. After several failures, due to these causes, I used a small sailing-boat in preference to the punt, of which, curiously enough, they seemed suspicious, and I was then very successful, getting almost every Grebe I saw, until my series was complete.

The change of plumage begins to show itself in a rosy blush on the upper front of the neck and in the feathers above the ears, after which the red gradually spreads down the neck. Any further verbal explanation of this change is unnecessary, as by reference to the coloured figures (Plate X. figs. 1-7) it will be seen how the old feathers change their



J. G. Millard del.

Illustrations showing the changes in Spring Plumage without a Molt.

Mintern Bros. Chromo.

colour and the new ones assimilate themselves, during their growth, to the old feathers, which are also changing. As in the case of nearly all changes to summer plumage, the feathers of the lower breast, lower back, or tail are not cast.

In method No. III. we see the most remarkable change, and this being of the type of which Mr. Allen so strenuously denies the existence, it is, perhaps, the most interesting: namely, the case where the bird assumes its summer dress by means of a recoloration of the feathers, in which both altered forms and colours take place. A few feathers are, however, generally cast on the neck and breast, which are replaced by new summer ones.

In this order perhaps the best examples are to be found in the large class of Waders: from which I take, as an example, the Sanderling (*Calidris arenaria*). Illustrations are given (Plate X. figs. 8-12) showing the gradual change of a feather from the back of the neck during the period extending from March to August.

The Waders are amongst the few birds in which seasonal changes of plumage are practically unaffected by confinement. Any regular visitor to the Gardens of the Zoological Society will have noticed how coincidental with wild ones most of the species kept there are in this respect. Even, therefore, supposing we could not believe the evidence of our own eyes, that the feathers undergo their great change without renewal, we have still to get over the fact that old feathers are not cast in the cages in spring in any quantity, whereas a complete moult undoubtedly takes place in autumn. Mr. Allen's chief argument seems to be that a feather once completed is dead and retains no further power of transmitting colour through the quill from the epidermis. Now if this were the case, how is it that we find a feather like that of figs. 9, 10, and 11—feathers which are to be found in the plumage of the bird during successive months? According to Mr. Allen the bird would have to renew its feathers every month, which is a manifest improbability. As there can be no reasonable doubt that the same feather goes through the change exhibited in figs. 9 to 12 (because there is no moult

during that period), and as we have the proof of all intermediate changes of the feather taking place, there seems equally little reason to doubt that fig. 8 also passes into fig. 9, for here we again have the transition shown.

We know that many of the small perching-birds assume their summer plumage by means of the grey edgings of the feathers wearing off; I do not, however, think that this takes place, in the case of the Sanderling, in the change from fig. 10 to fig. 11, but that it is the colouring-matter moving down the feather and obliterating the white. After this change I think that the edge of the feather then wears away in an appreciable degree, causing its form to be altered, as seen in fig. 12.

To sum up, so far I see no reason whatever to differ from the opinions of many of our own naturalists, and I maintain that Herr Gätke's solution of the spring change of the Dunlin and the Sanderling is perfectly correct as regards an actual influx of pigment through the old feather, whilst Mr. Frank M. Chapman's observations on these two birds in the same journal as Mr. Allen's require modification. We know well that new feathers come in place of the few that are cast, but that is no evidence that the whole bird undergoes a moult of all except the rectrices and remiges.

EXPLANATION OF PLATE X.

Method No. II.

SLAVONIAN GREBE, ♂ (*Podiceps auritus*).

Neck-feathers from the front of lower part of neck, showing change from winter to summer plumage.

A fine example of the most common type of spring change. The majority of the feathers are not moulted, but change colour; whilst those feathers which are cast are replaced by new summer-plumage feathers, which themselves assimilate their colour to the old feathers now in process of change.

1. Winter neck-feather before commencing to change. From a bird shot in January. Stromness, Orkneys.
2. First indication of change. The rich red colour seen emanating from sides of the quill. April 2nd. Same locality.
- 3 & 4. Feather still undergoing its further change. April 10th. Same locality.

5. The old feather now completely changed. May. Same locality.
6. A new feather coming in: being a good example of the fresh feather keeping down its tints to suit and be even with the old feather, which is still undergoing the change exhibited in No. 3. Taken from the same bird as No. 3 feather.
7. A new feather coming in full richness, assimilating itself to a fully-changed old feather. Taken from the same bird as No. 4 feather.

Method No. III.

SANDERLING, ♂ (*Calidris arenaria*).

Feathers from the back of the neck, showing the change of colour and form which takes place during the assumption of the summer dress.

Examples of a bird changing from winter into summer plumage without moult, the alteration in the dress being practically due to changes of colour of the same feather.

8. November or March feather. Crosby, Lancashire.
9. Taken from a bird killed in the middle of April. The dark markings now appearing.
10. Taken from a bird killed at Shoreham in the middle of May. Change complete, showing white tip.
11. Further change, showing white colours still moving towards extremity. (Dress in which the bird might breed.) From a bird killed at Shoreham, Sussex, June.
12. The feather has now terminated its transition, and will in a few days be cast for a new full winter one, same as No. 8. The darker markings have further advanced to the extremity, and a certain amount of wear and tear is plainly visible. In this case the tips are worn.

XLI.—On the Birds of the Philippine Islands.—Part VII.*
The Highlands of Mindoro. By W. R. OGILVIE GRANT.
With Field-Notes by JOHN WHITEHEAD.

(Plate XI.)

A CONSIDERABLE time has now elapsed since the readers of 'The Ibis' have heard anything of Mr. Whitehead's doings in the Philippine Islands. I need hardly say that this indefatigable collector has not been idle during the last year, but through a lamentable accident the entire results of four

* For Part I. see *Ibis*, 1894, pp. 406-411; Part II. *ibid.* pp. 501-522; Part III. *Ibis*, 1895, pp. 106-117; Part IV. *ibid.* pp. 249-267; Part V. *ibid.* pp. 433-472; Part VI. *Ibis*, 1896, pp. 101-128.

months' work in the island of Samar have apparently been lost, owing to the destruction of the s.s. 'Weiland' by fire off Singapore.

Steamers running directly between the Philippine Islands and London are comparatively few and far between, and the 'Weiland,' belonging to a German firm of merchants, appears to have been a somewhat cranky vessel, to which such a valuable collection should not have been consigned; but against this risk had to be considered the probable deterioration of specimens lying packed for months at Manila, and exposed to danger from heat, damp, and insects. The 'Weiland' had a cargo of hemp, and caught fire while lying off Singapore, where she was undergoing some repairs, her engines having broken down. Most of the cargo having been removed, the ship was scuttled to put out the fire. As no news has, up to the present time, been heard of the case containing this collection, it seems probable that it was really destroyed in the fire; but as a quantity of the cargo was certainly saved, and the packing-case in question was one of the last put on board before the 'Weiland' sailed from Manila, there seems to be still some faint hope that it has been merely mislaid at Singapore and may still find its way to London.

In a letter written from Manila on the 4th October, 1895, Mr. Whitehead informed me of his return from Samar in the middle of September, the wet season being then at its height and most of the birds in full moult. The collection made there contained examples of about 100 species, and from the descriptions given some of them must, no doubt, have been new. His letters contain interesting remarks about the birds collected and notes on the colours of the soft parts in almost every species, which makes the loss of the collection the more to be deplored, as these particulars are now rendered practically useless. At the present time Mr. Whitehead is once more in the island of Samar, having returned there towards the end of May of the present year with a view to making good the lost collection, though it is likely enough that some of the species previously obtained may not be met

with again. On the 19th October, 1895, he left Manila with a staff of seven collectors for the island of Mindoro, with the object of exploring the well-wooded highlands of this comparatively little-known island, and returned to Manila on the 16th February, 1896, after four months' absence. The results of this expedition are, Mr. Whitehead considers, by no means satisfactory, for at the time of his visit the wet season was at its height, and, owing to the almost continuous rains, collecting could only be carried on under the greatest difficulties. He tells us that during his stay on Mindoro seventy days out of a hundred were very wet, twenty dull and drizzling, while only ten were comparatively bright and fine; so it can easily be understood that he was unable to do nearly as much as he had hoped. Bird-life was comparatively scarce, and there can be little doubt that the majority of species, at least, change their abode during the rainy season and seek more sheltered quarters.

Unfortunately he experienced great trouble with his collectors, all of whom suffered at one time or another from fever, and took every opportunity of misbehaving. One man robbed him of his money, while others, left at the foot of the mountain to make a lowland collection, did practically nothing during many weeks, and sold both gun-caps and powder to the natives.

Although the Mindoro collection, representing "four months' very hard work and slow starvation," is not large, all the skins are as perfect as those sent in previous consignments, and one of the novelties, an enormous Fruit-Pigeon, obtained at an elevation of between 5000 and 6000 feet, is certainly one of the finest and most remarkable birds that Mr. Whitehead has discovered during his travels.

On landing at Mindoro a guide was engaged as pilot to the high ground, but this worthy led the expedition by a wrong path, and after a long day's march in the usual deluge of rain, Mr. Whitehead found himself on the bank of a fine river surrounded by the most dense and magnificent forest, where he was forced to remain for ten days waiting for porters. It was here that the expedition was nearly wrecked,

the river coming down in a tremendous flood with very little warning. The camp had been pitched about 20 feet above the river, which at this part was about 200 yards wide, but in less than twelve hours, fortunately in daylight, the water was running from two to three feet deep like a mill-race through Mr. Whitehead's tent, while his men had to escape in canoes from another house lower down the river, where most of the less portable boxes had been left.

By great exertions all the baggage was saved. "I have," writes Mr. Whitehead, "seen a good deal of the tropics, but I never encountered such deluges, such incessant rain, or such thousands of leeches. The leeches quite crippled two of my men, and one of the two caught 'birri-birri,' so I sent him back to Manila. All the others had fever, but I got off with two mild attacks of dysentery. I was so reduced, from having nothing to eat but tinned foods and rice, that I became quite weak, losing most of my energy at times. In four months I had eaten only five pigeons, two parrots, and some few thrushes, and, with the exception of eggs, there was no other fresh food to be had." Such is life in the highlands of the Philippines.

By making friends with a chief of the true aborigines of Mindoro, the twenty-five porters required to carry the baggage to the mountains were at last obtained, and, after two days' march under continuous heavy rain, Mr. Whitehead and his men camped at an altitude of 4500 feet on Mount Dulangan, in the main range of Mindoro. This range of mountains is somewhat horseshoe-shaped. Mr. Whitehead continues :—"To cut a long story short, it rained all November, all December, and all January : one deluge began on the 11th of December, and was perhaps second only to that which floated Noah and his great zoological collection, for it continued until the 6th of January, 1896 ! But for all this I was in good health, the climate being cool, seldom over 60° F., and some nights only 52° F. In such weather it was hardly to be expected that we should do very much ; in my opinion birds migrate to other and drier situations during such seasons. Pittas certainly do, and perhaps most other species.

The west-coast range would be much drier in October to February during the north-east monsoon, but much more difficult to reach unless a special steamer were to be chartered. The mountain on the east side is perhaps over 8000 feet, but the ranges are mostly from 5000 to 6000 feet. I was guided by the natives to a part that attained nearly 6000 feet, but we could not reach the rest of the mountain from this position. The weather, as I have told you already, was too bad for anything. There is no open land in Mindoro, which is an island covered with dense forest, very different from Luzon, which is comparatively thinly wooded. The undergrowth is very dense, and without cutting paths impossible to get through. Between 4500 feet and nearly 6000 feet we only obtained 20 species of birds, though, no doubt, there were others we did not see."

Some idea of the difficulties under which the Mindoro collection of birds has been made may be gathered from reading the above, and it seems almost incredible that such perfect skins as those before me can have been prepared under such adverse circumstances. The gems of the present collection are the great Fruit-Pigeon (*Carpophaga mindorensis*), already mentioned, allied to the much smaller *C. radiata* from Celebes; and a beautiful new "Blackbird" (*Turdus mindorensis*) with the middle of the breast and belly pure white and the sides and flanks bright chestnut-red. There is also a new Hawk-Owl. A good many of the birds obtained are identical with those previously discovered by Mr. Whitehead in the highlands of Luzon, and a number of others peculiar to Mindoro have been already described by previous collectors. It seems curious that the Blackbird of Mindoro should be entirely different from that discovered in Luzon, when so much of the highland fauna of the two islands appears to be identical.

In addition to the bird-collection, a few small mammals, chiefly rats, were collected; some having been obtained in the neighbourhood of the camp at an elevation of 5000 feet. There is also a bat, which will probably prove to be very interesting, but Mr. Oldfield Thomas has not yet had time

to study this part of the collection. Very few insects were obtained during this trip, but Mr. Whitehead has sent home a fine collection of dried plants, which will be reported on in due course by Mr. Rendle, of the Botanical Department of the Natural History Museum.

1. *ELANUS HYPOLEUCUS*, Gould ; Sharpe, Cat. B. Brit. Mus. i. p. 338 (1874).

An adult example of the Black-shouldered Kite was obtained in the lowlands.

2. *Scops*, sp. inc.

The present collection contains an imperfect skin of a small Owl with long ear-tufts and partially naked tarsi, which, if not identical with *Scops longicornis* from Luzon, is very closely allied to that species ; both the type of *S. longicornis* and the second specimen subsequently obtained in the Lepanto district are males, whereas the bird from Mindoro is a female. Unfortunately it was shot by Mr. Whitehead's collector at such short range that one side of the breast was entirely blown away ; but Mr. Whitehead has managed to make the bird into a fairly good skin, and the different characteristics can be well seen. It differs from the Luzon specimens in the following particulars :—The hair-like feathers on each side of the mandible are considerably shorter, the longest bristles being less than an inch in length, while in *S. longicornis* they measure fully 1·2 ; the feathers on the forehead and above the eyes are almost uniform pale buff in the Mindoro bird, instead of white ; the ear-tufts are less developed, measuring only 1·2 ; the white ring across the back of the neck is merely indicated by a few paler feathers, otherwise the upper parts are very similar to the type of *S. longicornis* ; the ground-colour of the underparts—especially the middle of the breast and belly—is mostly buff, and almost entirely devoid of white, which is so conspicuous in *S. longicornis*. Total length 7·2 inches, wing 5·3, tail 2·5, tarsus 1·15.

This imperfect specimen most probably represents a distinct species, but more material is required to settle the point.

3. *Ninox mindorensis*, sp. n.

An adult female of this little Mindoro Hawk-Owl was obtained in the lowlands, and is nearly allied to *N. spilocephala*, Tweeddl., from Mindanao and Basilan, resembling that species in having the top of the head and nape barred with buff. It may, however, be at once recognized by having the whole of the underparts, including the belly and flanks, tawny buff, transversely barred with brown, while in the female of *N. spilocephala*, though the breast is generally like that of the present species, the belly and flanks are always white, with longitudinal reddish-brown shaft-stripes. Total length 8.0 inches, wing 6.0, tail 3.0, tarsus 1.1.

I have of course carefully compared this species with Messrs. Bourns and Worcester's description of *N. spilonotus*, specimens of which were obtained in Mindoro, but the much smaller size of this bird serves to at once distinguish it.

4. *Ninox japonica* (Temm. & Schl.) ; Grant, Ibis, 1896, p. 111.

A male example of the Japanese Hawk-Owl was procured. It is a nearly typical example of *N. japonica*, much darker than the bird from Fuga Island, described in the last paper, the predominating colour of the underparts being reddish brown.

5. *Corvus pusillus*, Tweeddale, P. Z. S. 1878, p. 622.

Mr. Whitehead sends several examples of this small Philippine Raven from the lowlands of Mindoro. They are all in splendid freshly moulted plumage, the wings especially having a fine deep purplish gloss.

6. *Oriolus chinensis*, Linn. ; Grant, Ibis, 1896, p. 111.

A female of the Chinese Oriole from the lowlands.

7. *Artamides mindorensis*, Steere, List of Birds & Mamm. Philippines, p. 14 (1890).

Both sexes of the Mindoro Cuckoo-Shrike are represented.

8. *Muscicapula luzoniensis*, Grant, Ibis, 1894, p. 505.

Mindoro examples of the Luzon Flycatcher are perfectly similar to those obtained in the highlands of Benguet and

Lepanto. By some accident, *M. luzoniensis* was omitted from the list of birds given from the highlands of the Province of Lepanto ; several specimens were, however, obtained, and it should have appeared in the list before *M. westermanni* (see Ibis, 1895, p. 442).

9. *HYPOTHYMIS AZUREA* (Bodd.) ; Grant, Ibis, 1896, p. 111.

Three females of the Black-naped Flycatcher are perfectly similar in plumage to those obtained in Luzon, but at first sight they look somewhat different, for in all three Mindoro birds the shape of the bill has been artificially altered by lateral compression, and the culmen now appears to be rather high and vaulted.

10. *ZEOCEPHUS RUFUS* (G. R. Gray) ; Grant, Ibis, 1896, p. 112.

Adult and immature males of the Chestnut Flycatcher are quite similar to those from the north of Luzon. The tail of the adult male measures 5·6 inches.

11. *CRYPTOLOPHA NIGRORUM*, Moseley ; Grant, Ibis, 1895, p. 443.

Several examples of this little Yellow Flycatcher are perfectly similar to typical examples from Negros, as well as to those previously obtained by Mr. Whitehead in various parts of Luzon.

12. *STOPAROLA NIGRIMENTALIS*, Grant, Ibis, 1895, p. 443.

This Black-chinned Flycatcher, one of the novelties discovered by Mr. Whitehead in the highlands of Benguet, was again obtained on Mount Dulangan.

13. *SIPHIA PHILIPPINENSIS* (Sharpe) ; Grant, Ibis, 1896, p. 112.

Both sexes of the Philippine Red-breasted Flycatcher were sent.

14. *PHYLLOSCOPUS BOREALIS* (Blasius) ; Grant, Ibis, 1895, p. 443, & 1896, p. 113.

An adult example of the Arctic Willow-Warbler was shot on the 10th of October.

15. *LOCUSTELLA OCHOTENSIS* (Midd.); Seebohm, Cat. B. Brit. Mus. v. p. 113 (1881); Steere, List Birds & Mamm. Philippines, p. 20 (1890).

A pair of Middendorff's Grasshopper-Warbler were collected by Prof. Steere on the island of Marinduque on the 12th of May; so far as I am aware, this is the only other record of the occurrence of this species in the Philippine Islands. The present example, the sex of which was not ascertained, is evidently a bird of the year, the underparts being suffused with yellowish. It was shot in the month of January and is in full moult—the outer primary quills and outer tail-feathers of the old plumage being much worn, while the secondary quills and middle tail-feathers are quite fresh. This rare Warbler is said to breed in North-eastern Siberia and the Kurile Islands, passing through Japan on migration and wintering in the islands of the Malay Archipelago.

16. *TURDUS MINDORENSIS*, sp. n.

This extremely handsome Blackbird is perhaps most nearly allied to *Turdus layardi* from Viti Levu, Fiji Islands, but may be easily distinguished from that species by the following characters:—The middle of the lower breast and belly are pure white, only the sides and flanks being rich chestnut, and the whole of the upper parts from the mantle downwards are brownish black, contrasting strongly with the brownish-grey head and nape. This species is, of course, also nearly related to *T. seebohmi* and *T. whiteheadi*.

Adult male. Top and sides of the head and nape greyish brown, shading into brownish black on the rest of the upper parts and tail; chin whitish; throat and upper breast brownish grey, but considerably paler than the crown; sides of the lower breast and flanks rich chestnut; middle of the breast and belly pure white; under tail-coverts dark grey tinged with rufous and with wide white middles, widest towards the extremity.

Total length 9·0 inches, wing 4·25, tail 3·45, tarsus 1·2.

Adult female. Only differs from the male in having the

brownish-black upper parts washed with dark olive, most conspicuous on the rump and upper tail-coverts.

Total length 8·7 inches, wing 4·25, tail 3·25, tarsus 1·2.

In the *immature male* the upper parts resemble those of the female, but most or many of the feathers on the top of the head are brownish black and similar in colour to the back of the adult male.

In a slightly older example the head is mixed with the brownish-grey feathers of the adult plumage; in a younger bird the crown is uniform brownish black, and the feathers of the mantle have rufous shaft-stripes. Both these birds have the chest and upper breast mixed with rust-coloured feathers spotted with black at the extremity, and perfectly similar to those found in the young of the Common Black-bird (*T. merula*).

An *immature female* has the top of the head and nape warm dark brown, and the rest of the upper parts dark brown washed with olive, as in the adult female, but few of the feathers of the mantle and wing-coverts have narrow rufous shaft-stripes, and the throat and chest are mostly clad in the rust and black-spotted immature plumage. The nearly adult female differs only from the adult in having the crown blackish brown.

17. *IOLE MINDORENSIS*, Steere, List Birds & Mamm. Philip-pines, p. 19 (1890).

Iole schmackeri, Hartert, J. f. O. 1890, p. 155, & 1891, p. 202.

The Mindoro Streaked Bulbul appears to be a perfectly well characterized species, and a nice series of birds of both sexes was obtained between the months of November and January. Prof. Steere mentions that it may be distinguished from *I. philippensis* by its long beak, &c., but it is the *I. philippensis*, and not *I. mindorensis*, which has the longer bill.

18. *BRACHYPTERYX POLIOGYNA*, Grant, Ibis, 1895, p. 446, pl. xii. fig. 1 [♀].

The Luzon Shortwing was again met with in the high-

lands of Mindoro. Several males, but only one female specimen, were obtained, and the latter is not adult, most of the wing-coverts being edged with rust-colour, while the forehead and crown are more rufous than in the adult bird, and the throat and cheeks more rust-coloured. There can, however, be no doubt that the Mindoro bird is identical with the Shortwing obtained in the Lepanto highlands of Luzon, and that the slight differences are only due to age.

19. *MEGALURUS RUFICEPS* (Tweedd.) ; Grant, *Ibis*, 1895, p. 448.

A male of the Rufous-headed Marsh-Warbler was collected on the 21st November, this species being now recorded for the first time from Mindoro.

20. *PARUS ELEGANS*, Less. ; Grant, *Ibis*, 1895, p. 449.

This Tit appears to be fairly common in Mindoro.

21. *HYLOTERPE ALBIVENTRIS*, Grant, *Ibis*, 1894, p. 511, & 1895, p. 449.

Mr. Whitehead has again obtained several examples of the White-bellied Thickhead, which he first discovered in the highlands of Benguet.

22. *LANIUS VALIDIROSTRIS*, Grant, *Ibis*, 1894, p. 512, & 1895, p. 450.

The Thick-billed Shrike was again met with in the highlands of Mindoro. This bird appears to be scarce and difficult to obtain. The three Mindoro examples before me are rather more richly coloured than Luzon birds, the sides and flanks especially being deeper rust-colour ; but I do not attach any importance to these differences.

23. *ÆTHOPYGA FLAVIPECTUS*, Grant, *Ibis*, 1894, p. 513, & 1895, p. 111, pl. v. fig. 1.

Æthopyga minuta, Bourns & Worcester, *Occ. Pap. Minnesota Acad. Sci.* i. no. i. p. 18 (1894).

This beautiful little sulphur-breasted Sunbird was again found in the highlands of Mindoro, the female being obtained

for the first time. The readers of 'The Ibis' may remember that this species was discovered during Mr. Whitehead's expedition to the highlands of Benguet, N. Luzon, but only males were collected. In the figure given in 'The Ibis' for 1895, the breast and belly are of too pale a yellow. Messrs. Bourns and Worcester also obtained this bird in Mindoro, naming it *Æthopyga minuta*, but the only specimen they obtained, a male, was unfortunately stolen from their collection in July 1894. Brief as their description is, there can, however, be no doubt that *Æ. minuta* and *Æ. flavipectus* are identical, the latter name having priority by a couple of months. Messrs. Bourns and Worcester are also of this opinion (see *Ibis*, 1895, p. 405).

Adult female. Above olive-green, rather darker on the crown; feathers of the forehead with dark middles, a few indistinct red spots on some of the feathers of the mantle; rump bright yellow; chin and throat pale whitish yellow, becoming brighter on the breast, belly, and under tail-coverts; sides and flanks whitish yellow; quills blackish, the outer webs of the inner primaries and secondaries edged with olive, tinged with rufous; middle tail-feathers mostly olive-green; outer tail-feathers black, margined on the outer web and tipped with olive.

Total length 2·8 inches, culmen 0·6, wing 1·55, tail 0·9, tarsus 0·48.

24. *CINNYRIS SPERATA* (Linn.); Grant, *Ibis*, 1895, p. 254.

A single male of the Red-breasted Philippine Sunbird was obtained in the month of January by one of Mr. Whitehead's collectors in the lowlands. We shall be curious to learn whether *C. whiteheadi* will eventually be found to inhabit the highlands of Mindoro.

25. *CINNYRIS JUGULARIS* (Linn.); Grant, *Ibis*, 1895, p. 451.

Two males of the Yellow-breasted Philippine Sunbird were also among the birds sent from the lowlands.

26. *ZOSTEROPS AUREILORIS*, Grant, *Ibis*, 1895, p. 453.

A small series, including both sexes, of the Golden-fronted Silvereye were collected in the highlands. This species was

first obtained by Mr. Whitehead during his expedition to the highlands of Lepanto, N. Luzon, and the specimens from both islands are quite identical, both in colour and size. Some of the birds obtained in Mindoro are remarkably fine and perfect skins, showing the brilliant golden-yellow frontal band and patch in front of the eyes to great advantage, while the throat, breast, and underparts are brilliant yellow.

27. *PRIONOCHILUS INEXPECTATUS*, Hartert, Nov. Zool. ii. pp. 64, 486 (1895).

The Grey-breasted Thick-billed Flowerpecker was recently described from birds collected by Mr. A. H. Everett on Mindoro, and the same collector subsequently obtained specimens at Laguna de Bai, near Manilla. Mr. Whitehead now sends a male and several females from the former island.

28. *MOTACILLA MELANOPE*, Pall. ; Grant, Ibis, 1895, p. 258.

29. *SARCOPS CALVUS* (Linn.) ; Grant, Ibis, 1894, p. 517, & 1895, pp. 258, 456.

The present collection contains one more example of the Bald-headed Grackle, and it is satisfactory to note that the Mindoro bird found west of longitude 122° is a perfect example of the grey-backed form ; and I may here mention that a specimen recently received in a collection of birds from Negros is an equally typical example of the black-backed form. Mr. D. C. Worcester writes to me :—" Several points in your papers have aroused my interest especially, and I have intended to write to you regarding them, but have been so driven by other work as to have little time for such matters. For instance, I have had the specimens of *Sarcops calvus* collected by Steere, Bourns, Moseley, and myself, as well as those collected by the Menage Expedition, gone over with a view to verifying your ideas as to the two races, and will shortly send the results." I am waiting with interest to hear what conclusions Mr. Worcester arrives at ; at present all the material examined bears out the theory of an eastern and western race already put forward (see Ibis, 1895, p. 258).

30. *CHLORURA BRUNNEIVENTRIS*, Grant, Ibis, 1894, p. 518, & 1895, p. 456.

This beautiful little green Finch was again procured from the highlands of Mindoro, and the present collection contains an adult female. As may be remembered, it was originally discovered by Mr. Whitehead in the highlands of Benguet, and subsequently met with by him in Lepanto. It appears to be a rare bird, for up to the present time he has obtained very few examples.

31. *PITTA ERYTHROGASTRA*, Temm.; Grant, Ibis, 1896, p. 121.

The Red-bellied Pitta, which appears to be universally distributed throughout the Philippine Islands, was again met with on Mindoro, and both sexes are represented.

32. *PELARGOPSIS GOULDI*, Sharpe, Cat. B. Brit. Mus. xvii. p. 100 (1892); Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 33 (1894).

Pelargopsis leucocephala, Steere (nec Gmel.), List Birds & Mamm. Philippines, p. 9 (1890).

Gould's Stork-billed Kingfisher, so far as we at present know, is met with only on the islands of Mindoro, Calamianes, and Palawan. The type of this subspecies is labelled "Manilla, Gould Coll.," and it is quite possible that this locality may be perfectly correct, though the bird has not been met with in Luzon by any of the more recent collectors. The bird from Ilo-Ilo, Panay, collected during the voyage of H.M.S. 'Challenger,' is referred by Dr. Sharpe to his *P. gouldi*, but, with all due deference to the highest authority on Kingfishers, I think this identification is incorrect, for the Panay bird, in my opinion, undoubtedly belongs to the lighter form, *P. gigantea*, which is to be met with in Tablas, Sibuyan, Masbate, Samar, Leyte, Panay, Guimaras, Negros, Cebu, Dinagat, Mindanao, Malanipa, Basilan, Sulu, and Tawi Tawi.

Mr. Whitehead obtained several examples of both sexes of this handsome species of Kingfisher in the lowlands of

Mindoro; and in all, the head, neck, and underparts are rich ochre, only the chin and throat being slightly paler.

33. *ALCYONE CYANIPECTUS* (Lafres.); Grant, Ibis, 1894, p. 464.

A blue-belted specimen of this little Kingfisher was collected in the lowlands of Mindoro, and has been ascertained to be a male by Mr. Whitehead's collector; we have therefore, at present, no further proof that *A. cyanipectus* and *A. philippinensis* are opposite sexes of the same species, though I have now little doubt that this is the case.

34. *PENELOPIDES MINDORENSIS*, Steere; Grant, Cat. B. Brit. Mus. xvii. p. 374 (1892).

An adult male of the Mindoro Hornbill was obtained in November. This species is remarkable as having the sexes similar in plumage, whereas the females of all the other Philippine species differ conspicuously from the males and have the general colour of the plumage black.

35. *LYNGIPICUS VALIDIROSTRIS*, Blyth; BOURN & WORCESTER, Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 52 (1894); Grant, Ibis, 1895, pp. 114, 262, 465.

An adult female of the Luzon Pigmy Woodpecker is sent. Having before me a particularly fine series of the Philippine species of this genus, including Prof. Steere's types, I think it may be useful to append a key showing briefly the chief differences by which the five Philippine species may be distinguished. The late Mr. Hargitt did not include two of Prof. Steere's species in his key to the genus *Lyngipicus* (cf. Cat. B. Brit. Mus. xviii. p. 309), and he united *I. validirostris* with *I. maculatus*, not having seen typical examples of the latter species.

I. Upper back, scapulars, and wing-coverts strongly barred with white.

A. Ear-coverts brown.

a. White eyebrow-stripes very wide; nape and ground-colour of back brownish black.

- a'*. Red patches on each side of the occiput
very small, widely separated from one
another by the nape *I. validirostris* ♂.
- b'*. No red patches *I. validirostris* ♀.
- b*. White eyebrow-stripes narrow and ill-defined;
nape and ground-colour of back olive-
brown.
- c'*. Large red patches on each side of the
occiput, nearly confluent on the nape .. *I. maculatus* ♂.
- d'*. No red patches *I. maculatus* ♀.
- B*. Ear-coverts black; pale buff eyebrow-stripes
very wide, extending down each side of the
neck.
- c*. Tail black barred with buff; underparts pale
buff, rather darker on the chest.
- e'*. A well-defined red patch on each side of
the occiput *I. leytenensis* ♂.
- f'*. No red patches *I. leytenensis* ♀.
- d*. Tail buff barred with black; underparts pale
saffron-yellow, inclining to orange or tawny
buff on the chest.
- g'*. A well-defined red patch on each side
of the occiput *I. fulvifasciatus* ♂.
- h'*. No red patch *I. fulvifasciatus* ♀.
- II*. Upper back, scapulars, and wing-coverts practi-
cally uniform, only a few white bars and marks
down the middle of the back.
- C*. Large red occipital patches, confluent on the
nape and forming a complete band; wide
white eyebrow-stripes; chest bright saffron-
yellow *I. ramsayi* ♂.
- D*. No red occipital patch; otherwise similar to
the male *I. ramsayi* ♀.

I. validirostris.—*Hab.* Luzon, Mindoro, and Marinduque.

I. maculatus.—*Hab.* Panay, Guimaras, Negros, and Cebu.

I. leytenensis.—*Hab.* Leyte and Samar.

I. fulvifasciatus (= *I. basilanica*, Steere; types compared).—*Hab.*
S. Mindanao and Basilan.

I. ramsayi.—*Hab.* Sulu and Tawi Tawi.

There is apparently a good deal of uncertainty as to the real locality in which the type specimens of *I. ramsayi* (said to have been collected by Mr. A. H. Everett) were obtained, and I think there can be no doubt that the district

“N.E. Borneo” given on the labels is a mistake. In the box containing the five specimens in the British Museum we find the following MS. note, in the handwriting of our friend Mr. A. H. Everett:—“I have examined the two skins of *I. ramsayi* (types) in the Museum, and am confident they were not collected by me or by any native hunters from whom I obtained birdskins. I have never had any skins from Sulu nor visited the islands myself. Possibly these birds were collected by my brother, H. H. Everett, at Tagoro, in Western Sarawak.” This note bears date the 25th of September, 1890, and since it was written Mr. A. H. Everett has visited the island of Bongao, in the Sulu archipelago, and there obtained examples of *I. ramsayi*, some of which are now before us.

36. *THRIPONAX MINDORENSIS*, Steere, List Birds & Mamm. Philippines, p. 8 (1890).

Mr. Whitehead's collection contains two adult pairs of the Mindoro Great Black Woodpecker, which were obtained in the lowlands. Messrs. Bourns and Worcester have usefully supplemented Prof. Steere's somewhat brief description of his *T. philippinensis* (= *T. hargitti*, Sharpe), from Panay, Guimaras, Masbate, and Palawan, and as the original description of *T. mindorensis*, which is a well-marked species, is even shorter than that of the above, a few additional notes may be of service:—At first sight these two white-rumped species appear to be nearly, if not quite, identical, but, as Prof. Steere very rightly says, the Mindoro bird is smaller and always has a considerable amount of white on the throat. There is, however, even a better character for distinguishing the two species, which he appears to have overlooked—*T. mindorensis* has both upper and lower mandibles entirely black, while in *T. hargitti* (as noted by Prof. Steere) the upper mandible is blackish and the lower horn-white, as in the black-rumped species, *T. javensis*. The white spots at the base of the first and second primaries appear to be a variable quantity, and may, or may not, be present. *T. mindorensis* is also stated to differ from *T. hargitti* in

having the "scarlet cheek-patch limited to a narrow bar upon the lower jaw." The difference in this respect between the two species is very slight.

		inches.
Types of <i>T. mindorensis</i>	♂, wing	7·5.
	♀, "	7·7 (slightly broken at tip).
Whitehead Collection	2 ♂, "	7·85.
	2 ♀, "	8·0.
Types of <i>T. philippinensis</i> (= <i>T. hargitti</i> , Sharpe)....	♂, "	8·15.
	♀, "	8·5.
Steere Collection	♂, "	8·0 (slightly broken at tip).

37. *XANTHOLÆMA HÆMATOCEPHALA* (P. L. S. Müller); Grant, Ibis, 1895, p. 466.

A male of the Crimson-gorgeted Barbet from the lowlands of Mindoro.

38. *CACOMANTIS MERULINUS* (Scop.); Grant, Ibis, 1895, p. 466.

An adult female of the Rufous-bellied Plantive Cuckoo was obtained in January in the lowlands.

39. *EUDYNAMIS MINDANENSIS* (Linn.); Grant, Ibis, 1895, p. 115.

An adult pair of the Philippine Koel were obtained by Mr. Whitehead in the lowlands. He calls attention to the extremely hooked upper mandibles of the two specimens sent, but this character is common to all members of this species.

40. *CENTROPUS JAVANICUS* (Dumont); Grant, Ibis, 1894, p. 520.

An immature female of this Crow-Pheasant was collected in the lowlands.

41. *CENTROPUS STEERII*, Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 14 (1894).

Steere's Crow-Pheasant, a remarkable and extremely distinct species, was met with in the low-ground forests of Mindoro, examples of both sexes being obtained. It belongs to the dark-green group of the genus, which includes *C. mindorensis* (Steere) and the very closely allied, but somewhat

larger, *C. bernsteini*, Schlegel, from New Guinea. In both these species the general colour of the plumage above and below is black, glossed with very dark green, inclining to blue in the smaller (*C. mindorensis*). *C. steerii* has the general colour of both the upper and under parts brownish glossed with oily green, giving a general impression of very dark olive-colour, quite different from that of any other species of the genus known to me. While the wing is no longer than in *C. mindorensis*, the bill is nearly twice the size. On the other hand, *C. mindorensis* has the nail on the hind toe very long, nearly twice as long as in *C. steerii*.

42. *CENTROPUS MINDORENSIS* (Steere).

Centrococcyx mindorensis, Steere, List Birds & Mamm. Philippines, p. 12 (1890).

Two immature males of the small-billed Mindoro Crow-Pheasant were met with in the lower forests. The least mature of these, in mixed plumage, is worth noting. The immature feathers in the upper parts are dull brownish black, devoid of any gloss; the immature tail- and flight-feathers are similarly coloured, but slightly glossed, and the latter are indistinctly barred with pale rufous on both webs. The throat, breast, and belly are brownish black, indistinctly marked with buff; the rest of the plumage is similar to that of the adult.

43. *CACATUA HEMATUROPYGIA* (L. S. Müller); Grant, Ibis, 1895, p. 263.

A fine male of the Philippine Cockatoo was collected in the lower forests.

44. *PRIONITURUS MINDORENSIS*, Steere, List Birds & Mamm. Philippines, p. 6 (1890).

The violet-blue head of the Mindoro Racquet-tailed Parrot makes it easily distinguishable from *P. discurus* and other allied forms.

45. *TANYGNATHUS LUCONENSIS* (L.); Grant, Ibis, 1894, p. 410.

The Blue-crowned Parrakeet appears to be universally

distributed throughout the islands, and seems to have been fairly common in the low forest of Mindoro, for the present collection contains splendid specimens of both sexes. Mr. Whitehead has only once before met with this species, on his first trip to Mt. Arajat, in Central Luzon.

46. *LORICULUS MINDORENSIS*, Steere, List Birds & Mamm. Philippines, p. 6 (1890) ; Salvad. Cat. Birds Brit. Mus. xx. p. 526 (1891).

I have compared a beautiful pair of the Mindoro Loricet with Prof. Steere's types and find them identical.

47. *PHABOTRERON LEUCOTIS* (Temm.) ; Grant, Ibis, 1895, p. 467.

The White-eared Brown Pigeon is found in Mindoro as well as in Luzon, and a female example was shot on the 26th of December.

48. *CARPOPHAGA POLIOCEPHALA* (G. R. Gray) ; Grant, Ibis, 1895, p. 264.

A single male example of the Green-breasted Bar-tailed Fruit-Pigeon was shot in the highlands of Mount Dulangan ; it is the first time that this species has been recorded from Mindoro.

49. *CARPOPHAGA MINDORENSIS*. (Plate XI.)

Carpophaga mindorensis, Whitehead, Ann. & Mag. N. H. (6) xviii. p. 189 (1896).

This magnificent species of Fruit-Pigeon belongs to the group of *Carpophaga* characterized by having a wide grey band across the tail. The subdivision has been called *Zonophaps* [cf. Salvad. Cat. B. Brit. Mus. xxi. p. 207 (1893)], and though, of course, the great Mindoro Bar-tailed Fruit-Pigeon is allied to *C. poliocephala*, it is really most nearly related to *C. radiata* (Quoy & Gaimard) from Celebes and Sanghir ; in fact the latter may be regarded as a small representative form of the present species. In addition to the disparity in size, there are marked specific differences ; for instance, the vent and under tail-coverts are chestnut in the Celebean bird, whereas in the Mindoro giant they are



J.G.Keulemans del. et lith.

CARPOPHAGA MINDORENSIS.

Mintern Bros. imp.

grey, and the latter has a large greyish-black patch surrounding the eye and ear-coverts, which is wanting in the former. The species has been well characterized by Mr. Whitehead in the 'Annals and Magazine of Natural History,' and it is therefore unnecessary for me to give any further description, especially as the type is so well represented in Mr. Keulemans's fine drawing.

Mr. Whitehead says the eyes in this species have double rings of crimson-red, a character which is also found in *C. poliocephala*. He goes on to say, "It was only these splendid Pigeons that kept me at an elevation of nearly 5000 feet in the wet season in Mindoro. They were most difficult to obtain, and in nearly four months I only secured five specimens."

50. *CARPOPHAGA CHALYBURA*, Bonap.; Grant, Ibis, 1896, p. 124.

Mr. Whitehead again met with Bonaparte's Fruit-Pigeon, and a male is included in the present collection.

51. *MACROPYGIA TENUIROSTRIS*, Gray; Grant, Ibis, 1895, p. 469.

The Slender-billed Cuckoo-Dove was again found in the highlands and a male secured.

52. *CHALCOPHAPS INDICA* (Linn.); Grant, Ibis, 1895, p. 469.

The Indian Bronze-wing Dove, which is found all over the Philippine group, completes the list.

XLII.—*A few Notes on Birds of Egypt, from Observations made at Cairo in the months of January and February, 1896.* By E. CAVENDISH TAYLOR, M.A., F.Z.S.

I LEFT Marseilles for Alexandria by Messageries steamer on the 26th of December, 1895, and had good weather as far as the Straits of Messina. During this part of the voyage I saw a great number of Kittiwake Gulls (*Rissa tridactyla*), which used to fly close round the vessel, and were very tame,

but I do not think I saw any after passing the Straits of Messina. This species of Gull is, in the winter, abundant in the western part of the Mediterranean, but becomes rarer as you go eastward.

I arrived at Alexandria on December 31st, and stayed there till January 6th, 1896, when I went to Cairo, where, with the exception of four days in February, spent at Mena Hotel, at the Pyramids, I remained till nearly the end of February. On the 29th of that month I left Alexandria for Trieste and Venice. While at Cairo I visited the bird-market nearly every day. I enumerate below the rarer and more noteworthy species of which I saw specimens there. The chief ornithological event in my visit to Egypt was undoubtedly the obtaining near the Pyramids, and close to the Mena Hotel, that rare Chat, *Saxicola xanthoprymna*, as related at length in my notes. I again * visited the ostrich-farm at Matariyeh, and ascertained that the task of incubation is shared by the male and female ostriches.

SAXICOLA XANTHOPRYMNA (Hempr. et Ehr.). The Red-rumped Chat.

On the 17th of February last, during my stay at Mena Hotel, close to the Pyramids of Ghizeh, I took a morning stroll along the edge of the desert, at the base of the rocky plateau on which the Pyramids stand. About a third of a mile from the hotel, and close to the Bedaween village, I saw a Chat perched on a fragment of rock. On my near approach it took a short flight on to an old mud-wall, when I at once saw from its conspicuous red rump that it was nothing less than *Saxicola xanthoprymna*. I had no gun with me, and I knew no person at the hotel from whom I could borrow one. I was at a loss what to do, when an Arab passed near. I hailed him, and asked him if he had a gun. He said he had one at his house in the village. I told him to go and get it, and that I would give him three shillings if he would shoot for me that little bird, which he agreed to do, and went off to the village. For half-an-hour I watched

* For an account of a previous visit see *Ibis*, 1891, p. 474.

the Chat, which was surprisingly tame, and only took short flights between the rock and the mud-wall. At last the Arab came back with a companion, but without a gun. The second Arab said that his brother had a gun and that he would go and fetch him, so away went both Arabs, and for another half-hour did I watch the Chat. At length three Arabs came with a gun, the like of which I had never seen except in a museum. I showed the bird to the third Arab, who had the gun. He took deliberate aim, and the gun missed fire, but the Chat never moved. He tried again with the same result. I then suggested that he should change the cap, which he did. The gun then went off, but missed the bird, which only took its usual flight from the rock to the wall. The next shot was more successful, and the bird fell from the wall dead. I paid the three shillings and carried off my prize, which I found to be an adult with a black throat. I give these details to show the extraordinary and abnormal tameness of this rare bird. When I skinned my specimen, I searched long and carefully for the sexual organs, but was unable to discover any, owing to the parts being so much injured by shot. It is, however, presumably a male, from the black throat; indeed, it is exactly like the adult male figured in Dresser's '*Birds of Europe*,' pl. 31, except that the white of the underparts is less pure and more washed with rufous. The immature bird, figured on the same plate, is a specimen shot by me in Egypt, on the Nile, in March 1864, as recorded by me (*Ibis*, 1867, p. 60). In spite of this, Seebohm (*Cat. Brit. Mus.* vol. v. p. 382) makes the assertion that "the Red-rumped Chat appears to be confined to Nubia." He proceeds to say: "There is no example of this very rare Chat in the British Museum. The type (male of the year) is in the Berlin Museum, a second male of the year is in the collection of Mr. E. Cavendish Taylor, and an adult male is in the collection of Canon Tristram. No other examples are known."

The chief characteristic of this Chat is the bright rufous rump, which shows conspicuously in flight, and makes any mistake as to the species impossible. I am glad to have

added a fourth example to the three previously known to exist of *Saxicola xanthoprymna*.

BUBO ASCALAPHUS (Sav.). Egyptian Eagle-Owl.

I bought a fine specimen of this Owl in the Cairo market on January 11th.

VULTUR AURICULARIS. Sociable Vulture.

One example of this Vulture was seen in a small collection of birds made on the Nile in the month of January.

GYPS RUEPPELLI. Rüppell's Vulture.

There was a beautiful pair of these Vultures in the Cairo Zoological Gardens, which had been bought from an Arab at the Pyramids of Ghizeh, who said that he caught them about a day's journey away in the desert. They have since been acquired by the London Zoological Society, and are now in their Gardens in the Regent's Park. This species has never before been recorded from Egypt, and is new to the list of Egyptian birds*.

AQUILA CLANGA, Pall. Greater Spotted Eagle.

A very fine example of this Eagle, in the spotted plumage of the first year, was shot at Kubbeh, about three miles north of Cairo, on the 11th of January, and is now in my collection.

MILVUS ÆGYPTIUS (Gmelin). Egyptian Kite.

These Kites were more numerous than ever in and about Cairo, and the wonder is what they all find to eat, now that the town is kept tolerably clean, and dead carcasses are no longer allowed to lie about. I never could see them eating anything, their time being chiefly devoted to love-making and nest-building, for which latter purpose I have seen them carry sticks both in beak and claws. I never tired of watching their aerial flirtations and perpetual squabbles with the Crows (*Corvus cornix*), whose approach to their nest was always resented. In one tree in the Esbekiyeh garden this year there were two Kites' nests and one Crows' nest.

* See also Selater, P. Z. S. 1895, p. 400, and 1896, p. 609.

NYCTICORAX GRISEUS (Linn.). Night-Heron.

There was a large colony of these birds in a thick clump of trees on an island in the Zoological Gardens at Cairo. Late one afternoon, when the Night-Herons were beginning to leave the clump, I saw a large Falcon, probably a Lanner, make several stoops at one of them. The Heron uttered a loud croak at each stoop, and always managed to dodge the Falcon, which did not seem to be much in earnest.

ANAS ANGUSTIROSTRIS (Ménétr.). Marbled Duck.

I saw four or five of these Ducks in the Cairo market on Feb. 24th.

PORPHYRIO SMARAGDONOTUS (Temm.). Green-backed Porphyrio.

One in Cairo market on Feb. 9th.

OTIS TETRAX (Linn.). Little Bustard.

One example in Cairo market on Feb. 12th. This is a rare bird in Egypt, and neither Capt. Shelley nor Mr. J. H. Gurney appears to have seen it.

CHETTUSIA LEUCURA (Licht.). White-tailed Plover.

These Plovers were unusually abundant in the Cairo market this year. I never in my life saw one with a brown bar on the tail, as figured in Dresser's 'Birds of Europe,' pl. 529. Eye very large; iris red.

ÆGIALITIS PECUARIA (Temm.). Kittlitz's Plover.

Frequently seen in the Cairo market.

SQUATAROLA HELVETICA (Linn.). Grey Plover.

This is a rare bird in Egypt. I saw one example in the Cairo market on Jan. 10th.

LIMOSA LAPPONICA (Linn.). Bar-tailed Godwit.

I saw several of these Godwits in the Cairo market on Feb. 5th. Neither Capt. Shelley nor Mr. J. H. Gurney, jun., includes this species, and it is, I believe, new to the list of Egyptian birds.

NUMENIUS TENUIROSTRIS (Vicill.). Slender-billed Curlew.
Seen in Cairo market on Jan. 22nd. Rather a rare species
in Egypt.

RHYNCHÆA CAPENSIS (Linn.). Painted Snipe.

Unusually abundant this winter in the market both at
Cairo and Alexandria.

XLIII.—*Notes on some Birds from the higher mountains of
Nyika, west of Lake Nyasa, British Central Africa, with a
description of a new Species of Francolin (Francolinus
crawshayi).* By W. R. OGILVIE GRANT. *With Field-
Notes by* RICHARD CRAWSHAY.

(Plate XII.)

THROUGH the kindness of Mr. Richard Crawshay, who has
recently returned to England from British Central Africa,
the National Collection has recently received several rare
and interesting birds from the highlands of Nyika, which lie
to the west of Lake Nyasa. Among the specimens brought
home is a Francolin which is certainly undescribed, and I
therefore propose to name it, in honour of its discoverer,

FRANCOLINUS CRAWSHAYI, sp. n. (Plate XII.)

This Francolin, at present only known from a male, is
most nearly allied to *F. levaillanti*, and must be placed along
with that species in the section of the key which reads :
“*c*⁶. Black and white superciliary stripes meet at the back
of the head, and are confluent on the nape.” [Cf. Grant,
Cat. B. Brit. Mus. xxii. p. 129 (1893).] This character alone
is sufficient to separate the present species from *F. gariep-
ensis* and other nearly allied forms, and up to the present
time *F. levaillanti* has occupied a somewhat isolated position,
the section of the key quoted above serving to distinguish it
from all other members of the genus. *F. crawshayi* may be
at once recognized by the following characters :—The lower
pair of bands on the sides of the face, commencing just above
the angle of the gape, are mostly pure white, though some of



the feathers are narrowly tipped with brownish black; from these bands the pure white chin and throat are divided and bordered by a wide, dull, rust-coloured band, commencing at the angles of the gape; the fore part of the neck is mostly white, only a few of the lowest feathers being barred with black; the chest and sides of the breast mostly dark chestnut with pale buff shafts; the middle of the breast and belly nearly uniform buff, with a few blackish-brown marks on the outer feathers. The tarsus is considerably longer (1·9 as compared with about 1·7 inch). In other respects the plumage is very similar to that of *F. levaillanti*.

Total length 11 inches, wing 6·5, tail 2·75, tarsus 1·9.

The type specimen, a male from Cheni-Cheni mountain, in Nyika, W. of Lake Nyasa, was obtained at an altitude of 7400 feet, on the 27th June, 1895.

Mr. Richard Crawshay has kindly furnished me with the following note on this species:—

“This new species of Francolin, from British Central Africa, inhabits the higher mountains of Nyika, which in places attain an altitude of very nearly 8000 feet.

“A single specimen only was obtained, and this I shot on Cheni-Cheni mountain, quite on the top, at 7400 feet: it is a male, one of a covey of three birds seen at the time.

“Nowhere else in British Central Africa have I come across this bird: it is only found, apparently, at high altitudes, on open grass-land where the grass is no longer than on the Sussex Downs, and away from all human haunts and cultivation.

“So far as I am aware, there is no other country in British Central Africa which exactly resembles the Nyika plateau, to the west of Lake Nyasa: it is quite unique. It is high, bare grass-land, a good deal broken by valleys and smooth-faced gorges, the upper reaches of which are quite bare, the grass being only ankle-high, the soil a light loam. For a great part of the year it is shrouded in mist or misty rain: its climate, therefore, is very moist and always cool, and sometimes positively cold, with, in the cold season, bitter frosts at night.

"Here and there on the topmost ridges are patches of bracken and yellow ragwort, with flowers in profusion all over the place, chiefly gladioli and many kinds of everlastings.

"Lower down are heath-like 'misata'-trees, weather-worn and bent by the wind; lower still there are clumps of brambles, which at certain times of the year produce most luscious yellow fruit.

"In the bottoms, which are swampy and morass-like, are clear cold streams, which in some instances trace their source from some dark wooded gorge, but more often from a patch of marshy land.

"The Francolins—of which I have only come across the one species—confine themselves to the upper ridges: I have never found them below 7200 feet. They are fairly numerous, but difficult to find without dogs, as they lie close.

"The first intimation I had of their existence in the Nyika mountains was in August 1893, when I picked up some of their feathers on Kasungu mountain, about $2\frac{1}{2}$ days' journey N.W. of Cheni-Cheni. A little later I saw a covey high up on Nkalabwi mountain, at about 7500 feet, overlooking the Lumpi river. They are quite the most gamey-looking birds I have seen in British Central Africa; they lie close, and rise with a great whirr, jugging as they fly: they fly at a great pace, and generally take long flights, out of sight, over or round the mountain.

"Their food mainly consists of the white bulbous root of one of the commonest Nyika grasses, but they, of course, also eat insects, though these are not plentiful in Nyika.

"It is usually on the warm sunny sides of the mountains that they pass the daytime, as can be seen from the innumerable places where the roots of the grass have been scratched away by their powerful feet; their nights they spend in the bracken, on, or just below, the topmost ridges of the mountain. The Wanyika, who know this bird well, appear to have no specific name for it; they speak of it as the 'Kwale,' which, with slight alterations among some tribes, is the generic name for Francolin throughout all British Central Africa."

FRANCOLINUS JOHNSTONI, Shelley, Ibis, 1894, p. 24; Ogilvie Grant, 'Game Birds,' i. p. 132 (1895).

Johnston's Francolin is specially interesting as being one of the few members of this large genus in which the male and female differ widely from one another in the colour of their plumage. The latter are, moreover, provided with one or more pairs of powerful spurs, quite as large as those of the male. In the allied *F. hildebrandti*, from East Africa, the sexes were for many years supposed to represent distinct species, the male being called *F. altumi* and the female *F. hildebrandti*, while the fact of the adult female being armed with spurs seemed to favour this opinion. I have, however, already conclusively shown that *F. altumi* and *F. hildebrandti* are merely opposite sexes of the same species.

The males of *F. johnstoni* and *F. hildebrandti* are easily recognized by the differences in the black marking of the underparts, but the females are remarkably alike, both having the breast and belly dull brick-colour.

The habits of these species are no doubt very similar, for we know that *F. hildebrandti* inhabits the dense undergrowth of Mount Kilimanjaro, and is seldom, if ever, to be found in the open.

Mr. Crawshay writes as follows :—

“ The Ocellated Francolin (*F. johnstoni*) is widely distributed through British Central Africa; in wooded districts it is quite as common as Humboldt's Francolin (*Pternistes humboldti*), but from its retiring habits is not so often seen.

“ In its habits and haunts this bird is unique among the Francolins of this part of Africa; it frequents dense thickets and dark forest where the sun scarcely penetrates. Here, amongst the dead leaves, it may be heard making a great rustling and scratching, while searching for the insects which constitute, apparently, its sole food. It does not frequent cultivated land. Rarely is it found in the open, and then only on the very outskirts of the wood or thicket, in the early mornings and late in the evenings, when, if disturbed, it at once either runs or flies into cover. Its call is very striking,

and can be heard a long way off; it is harsh, ear-piercing, and high-pitched, and runs :—‘ Chik-a-chik ! ’—‘ Chik-a-chik ! ’—‘ Chik-a-chik ! ’—‘ Chik-a-chik ! ’—‘ Chik ! ’—‘ Chik ! ’—‘ Chik ! ’—‘ Chik ! ’—the notes being drawn out *longer* and LONGER, and going *higher* and HIGHER, until they terminate in a shrill shriek.

“The Anyanja, and most of the people of the southern part of the Protectorate, know the bird as ‘ Chikwelikwezi ’; the tribes to the north-western half of Lake Nyasa, such as the Wahenga, Wankamanga, and Watumbuka, know it as ‘ Chikweyukweyu ’—both names being derived from the bird’s call.

“From the nature of the cover it frequents, the Ocellated Francolin is not easily shot—I mean it cannot be shot in any great numbers : those I have killed myself have been shot either on the ground or in the trees after they have flown up to roost.

“I have shot many in my time, one here and one there ; but I cannot recollect having ever shot one on the wing.

“Many are the opportunities one has of getting shots at them, when one is waiting-in, or stalking noiselessly through, thick cover—say in search of bush-buck or red river-hogs ; *then*, however, it is not worth one’s while to fire.

“The specimen now presented to the British Museum is a male, shot by myself in a dense belt of scrub in Henga, about 3300 feet altitude, some $3\frac{1}{2}$ days’ journey S.W. of Deep Bay, in June 1895.”

EXCALFACTORIA ADANSONI (Verr.), Ogilvie Grant, Cat. B. Brit. Mus. xxii. p. 255 (1893) ; id. ‘ Game Birds,’ i. p. 197 (1895).

Although Adanson’s Quail is a widely-distributed species, met with all over Africa south of about 5° north latitude, it appears to be everywhere rather rare, though no doubt it is frequently overlooked on account of its very diminutive size.

Mr. Crawshay’s gift includes a male of this species, and is accompanied by the following note :—

“Adanson’s Quail is by no means plentiful in British

Central Africa; I myself have come across very few, and these have been confined to the plateaux west of Lake Nyasa. Some two miles east of Jakwa mountain, Ilenga, at 3300 feet altitude, I procured two specimens in November, 1895; here, in a dry rush-covered 'pan' (a great resort for wart-hogs), I came upon a bevy of four birds, and shot two, both males.

"Doubtless one must have come across this little Quail before then, but had not paid it any particular attention, and so did not notice anything remarkable about it.

"The fact is, in a country like this part of British Central Africa, where so much other and more desirable game is obtainable, Quail are no temptation to fire a shot, all the more so as one spoils one's chances of something better.

"It is only here and there that one meets with an odd bird or two, usually the large Common Quail (*Coturnix communis*) or another with a reddish-brown breast (*C. delegorguei*), and, of course, the little 'Button' (*Turnix lepida*), which so often falls a victim to the native's stick.

"In an ordinary day's tramp after game it is exceptional to see more than half-a-dozen Quail all told, and these, more often than not, surprise one at odd and inauspicious moments.

"Adanson's Quail, though little or nothing larger than the ordinary 'Button,' has not the same weak and restricted flight; it flies swiftly and strongly, and twists when on the wing after the manner of the larger Quail.

"The natives of the district* do not appear to know this bird, or at any rate have no other name for it than that by which they call the 'Button,' viz. 'Chizwiri' (not to be confounded with 'Chinziri,' the Manganja word); the Common Quail they know as 'Chimbuwi.' "

BUBO VERREAUXI, Bonap.

Bubo lacteus, Sharpe, Cat. B. Brit. Mus. ii. p. 33 (1875).

A fine female example of this rare Owl, together with its egg, was also presented by Mr. Crawshay, and he has

* "I. e., the Wahenga, Wankamanga, and Watumbuka."—R. C.

supplied me with the following interesting account of its capture:—

“This Owl (*Bubo verreauxi*) was obtained at Emkiseni, about 4000 ft. alt., on the Upper Kasitu river, 5 days’ journey S.W. of Deep Bay, in June 1895. Some account of how it came into my possession may be of interest.

“Having occasion to visit Perembi, one of the most northerly Angoni chiefs, I had camped in a bottom a mile or so below his village—Emkiseni, which is situated on a bare, wind-swept hillside, bitterly cold at this time of year.

“A night in this bottom drove us to seek shelter still lower down to get out of the wind, and we shifted our camp into a clump of huge fig-trees, knotted and gnarled with age and full of hollows.

“Here one of my Wahenga noticed a streak of guano in the mouth of a hollow in one of the trees, and climbing up to it he peered in: he was greeted with a roaring hiss and a glimpse of a pair of eyes gleaming in the darkness of the hollow, and in his terror and hurry to get away he almost fell out of the tree. Another man then went up, prepared to encounter some such bird as an Owl, or perhaps a cat or a genet; and he, after a struggle with the bird, in which he got clawed and bitten, pulled out this Owl and brought her down, she having in her clenched talons the remains of a broken egg. Another egg was taken from the tree intact; this I blew, and found to be addled, as also was the egg broken by the bird.

“I then killed the Owl with a dose of strychnine and skinned her—not, however, without considerable qualms of conscience; she looked plaintively reproachful, almost human, too, with her large dark eyes and pink eyelids.

“A dozen or so of Perembi’s wives watched me at work with interest and awe, sitting humped-up in their cow-hide cloaks in front of my tent. Hundreds of men, too, would have done the same, but were hustled off by my own people to a respectful distance, when they sat down and lined the hillside above us, row upon row.

“The Owl proved to be extraordinarily fat, quite the

fattest bird I have ever seen ; a thick layer of soft white fat covered the whole body.

“ During the two following nights we were at Emkiseni, her mate, poor thing, occupied the fig-tree over my tent, and all night long kept up a booming ‘Oo-oo,’ deep and full-toned.

“ Judging from the size and powerful talons and beak of this Owl, one would suppose its prey to be tolerably large game. There is no game, however, at Emkiseni, except Guinea-fowl (very plentiful ; I shot three round our camp), a few hares, and a very few Partridges, with here and there an antelope (*Cephalophus* sp. inc.) weighing about 35 lbs. or so, and some very small mammals and snakes.

“ Some of my men told me that this Owl eats caterpillars, but I cannot say whether this is a fact ; they also told me it eats snakes.

“ The Wahenga, Wankamanga, and Watumbuka (who are the *original* inhabitants of this neighbourhood ; the Angoni are their conquerors and hold their country) call this Owl ‘Kwita’ ; they regard it, and all Owls, with superstition : they say it is ‘Chyuni cha uhawi’ = ‘A bird of witchcraft’ ; that, if it perches on a housetop, it forebodes death.”

XLIV.—*Additional Observations on the Birds of the Province of Fohkien* *. By C. B. RICKETT and J. D. DE LA TOUCHE.
With Notes by W. R. OGILVIE GRANT.

As some of the birds we have obtained of late are of more or less interest as occurring in this district, we append lists of the same, which we hope may prove of interest.

Last November we sent our native collectors to Knatun, a village about 270 miles from Foochow, on the mountains at the extreme north-west of this province, and on the borders of that of Kiangsi. The village, according to Père David, stands some 3000–4000 feet above the sea, the mountain it is situated on being some 3000 feet higher and covered with forest.

* Cf. Ibis, 1892, pp. 400–430 & 477–503 ; and 1894, pp. 215–226.

Our men brought back some 200 odd skins, of 66 species, the most interesting of which will be found given in List No. 1. The other places named in this list are situated on the river Min, and are (roughly) distant from Foochow as follows:—

Shui kou . . . about 70 miles.

Yen Ping Fu . . „ 140 „

Hsia Yang . . „ 170 „

Shao wu Fu . . „ 250 „

From the latter place to Kuatun the road lies across the mountains.

LIST No. 1.

Birds from Kuatun, &c., Fohkien, China.

Name of Species.	Month.	Locality.
<i>Garrulax picticollis</i>	Dec.	Kuatun.
<i>Suthora webbiana</i>	„	Do.
<i>Cinclus pallasi</i>	„	Do.
<i>Henicurus guttatus</i>	„	Do.
<i>Phylloscopus reguloides</i>	Nov.	Hsia Yang.
<i>Machlolophus rex</i>	Dec.	Shao wu Fu and Kuatun.
<i>Parus venustulus</i>	Nov. & Dec.	Hsia Yang, Kuatun, and Shao wu Fu.
<i>Parus pekinensis</i>	Dec.	Kuatun.
<i>Sitta sinensis</i>	„	Do.
<i>Pycnonotus xanthorrhous</i>	„	Shao wu Fu.
<i>Pericrocotus speciosus</i>	„	Hsia Yang.
<i>Poliomyias luteola</i>	Nov.	Yen Ping Fu and Hsia Yang.
<i>Herpornis tyrannulus</i>	Dec.	Between Shao wu Fu and Kuatun.
<i>Spizaetus nipalensis</i>	„	Shao wu Fu.
<i>Clangula glaucion</i>	„	Do.
<i>Pucrasia darwini</i>	„	Kuatun.
<i>Amaurornis akool</i>	„	Between Yen Ping Fu and Shao wu Fu.

HERPORNIS TYRANNULUS, Swinhoe.

This species has hitherto, we believe, been recorded from Formosa and Hainan only. As we are not quite sure of our identification, we append a description of the only specimen obtained. It was shot between Shao wu Fu and Kuatun in December. It was marked by our collectors as a female, and measures—wing 2·4 inches, culmen ·4, tarsus ·6.

Feathers round eye very light greenish grey. Lores, cheeks, and ear-coverts grey, these last tinged with green. Upper parts yellowish green, lighter on rump and upper tail-coverts. Crest-feathers dark-centred. Wing-coverts same as back; the lesser somewhat darker. Quills blackish brown, edged externally with yellowish green. Inner web of first primary edged with yellow at the base, each succeeding feather with a greater extent of yellow edging. Secondaries with the whole of the inner webs yellow-edged. Under wing-coverts yellowish white. Axillaries very pale grey, tinged with yellow. Tail yellowish green, brighter than the back, all but the two central feathers edged internally with greenish yellow. Underparts pale ashy grey, paler on the throat and middle of the breast. Belly slightly tinged with green. Under tail-coverts greenish yellow.

[This description agrees perfectly with typical *H. tyrannulus*, Swinh., but, as pointed out by Dr. Sharpe, Cat. B. Brit. Mus. vii. p. 637, that is merely a slightly smaller race of *H. xantholeuca*, and it seems to me very doubtful whether it is worthy of even subspecific rank.—W. R. O. G.]

† *HENICURUS GUTTATUS*, Gould.

This species is, we think, new to the China list.

[Dr. Sharpe mentions "Southern China" in giving the habitat of this species, but apparently there is no authority for this statement.—W. R. O. G.]

† *PHYLLOSCOPUS REGULOIDES* (Blyth).

Rickett shot a specimen of this bird here in October, and our men brought back a November specimen from Hsia Yang. We describe them as follows:—♂, wing 2.25 inches; ♀, wing 2.15. Second primary about equal to ninth; third, fourth, and fifth nearly equal. Back and scapulars bright olive-green; rump and upper tail-coverts brighter. Top of head olive-green, with a broad pale median streak. Nape of a much darker colour, contrasting strongly with the head and back. Supercilium yellow and extending to the nape. A dark stripe through the lores and eyes. Cheeks and ear-coverts greenish yellow, brighter just under the eye-

stripe. Lesser wing-coverts light olive-green; greater darker, and with paler edges. Tips of median and greater coverts yellow, forming two wing-bars, of which the upper is the less conspicuous. Quills brown, edged externally with olive-green; those on primaries paler. Edge of wing, under wing-coverts, and axillaries bright yellow. Middle tail-feathers olive-green; rest brown, tinged and edged externally with olive-green, and narrowly margined internally with yellowish white. Underparts greyish white, more or less suffused with yellow. Middle of belly whitish. Under tail-coverts greenish yellow.

[This identification is doubtless correct.—W. R. O. G.]

† SUTHORA WEBBIANA, Gray.

By post we send two skins, and would be grateful for your opinion as to the correctness of our identification. The specimens we shall be pleased to present to the British Museum.

[Correctly identified.—W. R. O. G.]

AMAURORNIS AKOOL (Sykes); Sharpe, Cat. B. Brit. Mus. xxiii. p. 155 (1894).

Four specimens are identical with two sent by De La Touche to the Rev. H. H. Slater from Swatow, and described by the latter in 'The Ibis,' 1891, p. 44, as a new species under the name of *Gallinula* (*Amaurornis*) *coccineipes*.

† CINCLUS PALLASI, Temm.

Eight specimens from this province, compared with six Formosan skins in Mus. de La Touche, show a marked difference in the bill, which is longer and coarser in the Fohkien birds:—

Average culmen in Fohkien birds . . 0·85 inch.

„ „ Formosan birds . . 0·75 „

Otherwise they are much alike.

List No. 2 gives our additions to the Foochow birds published in 'The Ibis' for July 1892, pp. 400 & 477, and 1894, p. 215.

LIST No. 2.
Additions to Foochow List.

Name of Species.	Month.	Remarks.
<i>Phylloscopus reguloides</i>	Oct.	One specimen.
<i>Luscinola schwarzi</i>	"	Winters here.
<i>Urosphena squamiceps</i>	"	Passes on migration.
<i>Pericrocotus cinereus</i>	Sept.	? Do. (3 specimens).
<i>Muscicapa griseisticta</i>	Oct.	? Do. (1 specimen).
<i>Myiagra azurea</i>	Nov.	(1 specimen).
<i>Aquila maculata</i>	Dec.	? Straggler (1 specimen).
<i>Astur soloensis</i>	Sept.	One specimen.
<i>Pelecanus</i> , sp. inc.		Winter visitor on coast.
<i>Ciconia nigra</i>	Oct.	Straggler.
<i>Anser albifrons</i>	"	Uncommon.
<i>Excalfactoria chinensis</i>	Dec.	A pair shot by us.
<i>Turnix taigoor</i>	"	One specimen.
<i>Gallinago gallinula</i>	Jan.	Do.
<i>Machetes pugnax</i>	Oct. & Dec.	Two specimens.
<i>Sterna hirundo</i>	Sept.	

+ GALLINAGO GALLINULA, Linn.

Has not yet been recorded from China. It was a male, shot on 16th January this year.

PELECANUS, sp. inc.

Rickett gave a specimen of this Pelican to the British Museum last year, but it had not been named when he left England. Since then we have obtained two more, and would like to know the species.

[Dr. Sharpe has not yet had an opportunity of examining this specimen, which will be noticed in his forthcoming volume of the Catalogue.—W. R. O. G.]

+ MACHETES PUGNAX (Linn.).

This species has not been previously recorded from China. Rickett shot a specimen in 1895, and subsequently Mr. de La Touche obtained another example from this place.

CICONIA NIGRA (Linn.).

In 'The Ibis,' 1894, p. 224, Rickett suggested the possibility of the specimen he obtained having been brought down from Shanghai. Last October, however, a friend of ours flushed four Black Storks from a creek near the racecourse and shot one.

‡ ANTHUS RICHARDI, Vieill.

In a letter to Dr. Sharpe (4th December, 1895) Rickett expressed a hope that the birds which he presented to the British Museum, and which had been identified as *Anthus infuscatus* (Blyth), might be re-examined, as he felt sure, from information obtained from the India Museum, that the species was not a good one. The birds Dr. Sharpe referred to *A. infuscatus* were specimens of the *larger* race of *A. richardi* that winters here. On Rickett's return to Foochow, De La Touche pointed out to him that Swinhoe had already remarked (P. Z. S. 1871, p. 366), "*Corydalla infusca*, Blyth: race that breeds on the Fohkien hills," thus identifying it with our *smaller* summer visitor and depriving it of specific rank.

+ TURNIX TAIGOOR, Sykes.

Last December De La Touche shot a female which appears undoubtedly to be of this species. A North-Formosan specimen in that gentleman's collection (also a female, shot in January) differs from this bird as follows:—Buff markings on the upper parts rounder and more drop-like than in the Foochow bird, in which they are more streaky. The Foochow specimen is darker above, owing to the black cross-pencilling of the feathers being more pronounced. Beneath, the Formosan specimen has a greyish-buff throat; rest of underparts reddish ochraceous, deeper and richer on fore neck, breast, and flanks. Middle of fore neck and breast almost unmarked; sides of neck and breast marked with black lunules. In the Foochow specimen the throat is white. Underparts buffish white, boldly barred with black on the fore neck and breast, in the centre of the upper part of which there is an irregular black patch.

Measurements are the same, viz. :—

	Wing.	Tarsus.	Culmen.
	in.	in.	in.
Formosa	3·5	1·1	0·5
Foochow	3·4	1·1	0·5

[The Foochow bird is evidently correctly identified as *T. taigoor*. It is an immature female, as may be seen by the

white throat, irregular black patch on the middle of the fore neck, and whitish-buff underparts, boldly barred with black on the fore neck and breast. It appears to me equally certain that the Formosan example with which it is compared is *T. blanfordi*, which belongs to quite a different section of the genus. We read that the throat is greyish buff; the rest of the underparts reddish ochraceous, deeper and richer on the fore neck, breast, and flanks; the middle of the fore neck and breast almost unmarked, while the sides of the neck and breast are marked with black lunules. Moreover, the upper parts have the buff markings rounder and more drop-like, and the black markings are less pronounced. This description agrees perfectly with *T. blanfordi*, which is common in China, but has never been recorded from Formosa, though there seems to be no reason why it should not occur there.—W. R. O. G.]

XLV.—Notes on some of the West-Indian Humming-birds.

By GEO. E. LODGE, F.Z.S.

THE following notes on the habits of a few species of Humming-birds, made during a visit last winter to some of the West-Indian Islands, will, I hope, not be altogether uninteresting. In these islands Humming-birds are very fairly plentiful, but in no great number of species, most of the islands having only three or four, with the exception of Tobago, which has six or seven, and Trinidad, which has a good many more. But at the last island I made no stay.

The chief thing that occurred to me while making these notes was the fact that drawings of Humming-birds in books of natural history are almost always untrue to nature, which probably arises from the fact that the birds have never been seen alive by the artists. The stuffed Humming-birds one sees in museums are even worse, being gross caricatures, both in shape and attitude, and even the magnificent Gould collection fails entirely in exhibiting the subjects in natural positions.

My stay at each of the islands visited was generally of

only two or three weeks' duration, with the exception of Jamaica, so that I had not much time to devote to Humming-birds alone, as I was collecting ornithological and entomological specimens generally, and also spent a considerable portion of my time in landscape-sketching. In the latter pursuit, however, I generally had with me either a gun or a butterfly-net; but as I was shooting and skinning entirely single-handed, the series of specimens that I brought back with me was not extensive.

The islands that I made any stay at were Jamaica, Dominica, Tobago, and Grenada, and I propose treating of the species of Humming-birds found in these islands in the order named.

Jamaica was the first island that I visited, and as I stayed some six weeks, I had ample opportunities of studying the habits of the three species found there. These are *Aithurus polytmus*, *Lampornis mango*, and *Mellisuga minima*, the two former being peculiar to Jamaica, while the third is reported to be only found besides in the adjacent island of San Domingo.

The favourite haunts of the beautiful *A. polytmus* are among the clumps of rose-apple trees, which usually grow some 20 feet in height, but when growing by the sides of rivers are considerably loftier, probably often 40 feet in height. I think I never failed to find some of these birds in such situations. In foliage this tree is very dark in colour (excepting the young outside shoots, which are of a lovely rose-pink and golden green), and it is not at all unlike a mango, but the leaves are longer and narrower, and at the time of year I was there (January and February) the trees were full of their beautiful spring-like blossoms, of a pale delicate yellow colour, a mass of long delicate stamens spraying out in all directions. These flowers are the delight of the Long-tailed Humming-bird, and here he may be watched at leisure all day long. His presence is often detected before he is seen by the sharp, high-pitched, whirring noise of his wings, as he dashes from one blossom to another, but when hovering for his food the humming noise produced by his wings is in

a much lower key and not very loud. The sharp whir of wings just mentioned is produced only by the male bird, his mate flying about silently, except when hovering; neither did I notice it with any other species that I came across.

During a walk through the celebrated Fern Gully, which is halfway between Moneague and Ocho Rios, on the north coast, the presence of *A. polytmus* was very apparent in certain places. I saw few specimens, indeed, except when a bird might fly over the road from one densely-clad forest hillside to the other, but I was continually hearing the unmistakable sharp whirring of their wings.

Both male and female seem to be very pugnacious; at any rate they are both very fond of chasing the opposite sex. The male bird, too, is unremitting in his attacks on any other small bird that happens to come and hunt on the same tree; and I have seen one dash off from a rose-apple tree and chase away a harmless little hen bird that was busily feeding among some flowers close to the ground, 20 yards away from the tree on which he had been sitting. But among their own sex they seem to be quite amicably disposed, several of them often being seen hunting for their minute prey among the blossoms of the same tree, without interfering at all one with another. Perhaps they may be more pugnaciously inclined towards their own sex in the breeding-season—if, indeed, there is a regular breeding-season for this species, which Gosse seems to doubt in the charming descriptions of this species in his ‘Birds of Jamaica.’

I had no luck in finding any nests here, although I found the beginning of one on Feb. 2nd. I was sketching the positions of a hen *A. polytmus* and a *Lampornis mango* (Mango Humming-bird), which were on the same tree (a guava, I think), when I noticed the *A. polytmus* seemed very anxious and fidgety; she kept coming and perching on twigs very close to me, and then dashing off and trying to drive the Mango away. However, she presently came with some cottony stuff in her beak, which she placed on a horizontal twig underneath some large leaves. On investigation there was found to be quite a little platform-like lump of cotton,

which was evidently the beginning of a nest. But it was never finished. In a week's time the twig was found to be quite bare, without a vestige of cotton about it, much less a Long-tailed Humming-bird's nest: greatly to my disappointment, as I had fully expected to have found the nest finished, and had intended to have annexed it forthwith.

The note of this bird is rather loud—a clear piping cry, repeated at short intervals. The flight is very rapid: when extended for any great distance a very perceptible dipping is noticed; and from the pace the birds go the long tail-feathers (the second from the outside) stream nearly straight behind them. I think these were the tamest Humming-birds I met with. They will sit motionless on a twig and allow themselves to be scrutinized and sketched from a distance of only a few feet, now and then dashing off with a loud whir and inspecting one blossom after another—hovering in all sorts of positions, sometimes above the flower, with their head and bill pointing straight downwards; at other times seeming to be suspended by the bill directly underneath the flower; and again they will cling to a leaf or twig with their tiny feet, the better to reach their prey, while the wings are all the time vibrating as rapidly as ever; perhaps, after the inspection of a dozen or so of blossoms, returning to the very twig from which they started. When at rest they sit almost always in a very bunched-up position—back and breast feathers puffed out, wings drooping beneath the tail, the two long feathers of which are always crossed, except when blown about by the wind, the head drawn short in to the shoulders, and the beak pointing rather upwards towards the sky. When thus at rest they have a habit, in common with other species of Humming-birds, of incessantly and rapidly protruding the tongue. To see the full beauty of the male Long-tail the rays of light must be directly opposite to the almost flat surface of the feathers. Hold him by the beak with your back to the window in a nearly vertical position, but with his tail rather nearer to you than the head, and the breast is nothing but dull black; just slightly tilt him forward, so that his head is nearer than his tail, and his

whole breast, from beak to feet, suddenly blazes out into the most gloriously brilliant emerald-green that it is possible to imagine. It fairly startles one by its sudden intensity. This beautiful colour loses much of its brilliancy after death when exposed for long to the light. The specimens in the Gould collection in the British Museum at South Kensington have lost all the golden colour from the green, and are now much bluer in colour than when fresh. Also when the feathers are damp they change their colour for the time. I have noticed this in both *A. polytmus* and *Eulampis holosericeus*: the former when put away in a damp atmosphere for relaxing, and the latter when cleaning blood from the feathers with plaster of Paris and water. In both cases the colour becomes much more golden; but when dry again the original colour obtains.

To see the Long-tail in all his glory, follow one that has dashed away from a rose-apple tree to feed among some patches of low-growing lantana; here he will be below the level of your eye, instead of being pretty high up among the rose-apple blossoms. A silent approach and a cautious halt will not alarm him, and you can watch him at your leisure as he rapidly examines one orange-flower head after another, even coming almost within arm's-length of you, balancing himself with rapidly humming wings, for all the world like a big humming-bird hawk-moth, especially in the perfect command he has over his position, shifting only a fraction of an inch at a time as he probes his coral-red black-tipped beak further into the corolla of the flower; his bronzy-green back and jet-black head exciting your admiration, until it is eclipsed by the blazing emerald of his breast as he suddenly faces you at another flower-head, peering into the blossom with sparkling black eyes, all the time surrounded by a filmy grey halo of rapidly vibrating wings, while the two long streamers from his blue-black tail float behind him, gracefully waving at every motion of the bird. Suddenly he is gone—so quickly, indeed, that you hardly know in which direction this little emerald fairy phantom of an atom has sped his hungry way. But your eye reaches other patches of

lantana, and presently again discovers him hovering over and among the blossoms twenty yards away. Presently he stops feeding and sits on a little twig, his long tail-feathers almost reaching to the ground, a little round ball of beautiful feathers, the two ends of his long black crest just sticking out from the nape of the neck. Again, with a clear little piping cry, he shoots off on the war-path, as he sees a little white-breasted hen of the same species, also busily employed in filling her ever-hungry little stomach; and the pair dash off, whizzing and zigzagging in a mazy course through the bushes with most marvellous speed and dexterity, screaming in their mad chase, until they are quickly lost to sight—but not to mind.

Sometimes the Long-tails hunt insects on the wing, and splendid they look as they dash hither and thither in the air, frequently stopping in their rapid evolutions and hovering perfectly motionless for several seconds at a time, always in a very upright position, as if they were suspended by an invisible thread by the beak. Then, if you are sitting on a good high bridge over a river, with a dense fringe of sombre-coloured rose-apple trees on both banks 30 or 40 feet high, spangled with their lovely creamy blossoms, these overshadowed by tall, graceful, ever-bending bamboos, you have a beautiful background as a setting for the delicate little emerald bird shooting about in the air, glowing in the rays of the tropical sun. Presently a dusky bird, rather larger than the Long-tail, whizzes out from a bare twig where he has been sitting unobserved, and also takes to fly-catching in the air. He looks sober enough in colour until there is suddenly a purple flash underneath him, as he flirts out into a wide fan his broad tail-feathers, and this he incessantly does as he hovers about in the air. This is the so called Mango Humming-bird (*Lampornis mango*), and perhaps the company will be joined by one or two more, now darting about in the air and anon dashing off to rest on some twig or to pursue their explorations among the blossoms on the trees at the side of the river.

To see a sight like this it is worth braving all the terrors of the Atlantic.

It is beautiful to watch the sports of these fairy birds, and it seems absolutely barbarous that thousands upon thousands of Humming-birds should be slain for unscientific purposes. In the cause of science and art one has no compunction in killing specimens: the world at large benefits therefrom. I am glad to say that now all the West-Indian islands under the British rule have strict laws as to the preservation of birds—all the brightly-plumaged birds being absolutely protected all the year round, while other species are protected during their breeding-seasons. But for scientific purposes one can always obtain a special permit to shoot, and we had no difficulty in obtaining this permit from the various Governors of the islands we visited, with one exception, of which in its place.

I see that Gould says of the Mango Humming-bird that the specimens with steely blue-green throats are the female birds, but he does not say that this has been proved by dissection. Two females that I skinned and dissected have not a trace of any metallic colour on the throat, and not much of the purple glow down the sides of the neck, and a male bird was exactly the same in colour. One of these birds had a mass of minute black insects in its crop. I put this mass into water, and on examination through a strong magnifying-glass it appeared to be composed entirely of very small black ants, each having two pairs of longish wings. There were several dozens of them. That the birds do suck nectar out of flowers is true enough, but they find their staff of life in insects. One of my specimens, being hung up by the foot before skinning to keep it out of the way of ants, dropped some clear liquid from its beak. I tasted one of these drops as it hung from the end of its mandibles, and it was quite sweet: evidently flower-nectar.

This species has a very long neck, which is quite apparent when the bird is hovering for its food. When at rest it often sits as bunched-up as does the Long-tail, but not

always so. When beginning to get alarmed on its perch it will stretch out its neck and draw all its feathers close in to the body, showing its shape to perfection. On such occasions one can clearly see the remarkable depth of the breast, caused by the deep keel to the sternum. I suppose that the pectoral muscles of Humming-birds are larger, in proportion to the size of the bird, than those of any other bird in the world; and well may they have such mighty muscles, when one comes to consider the enormously powerful and sustained flight of the bird. When Humming-birds are hovering, too, this shape is very apparent.

The Mango bird seems to be rather more partial to open country than is the Long-tail, and may often be seen by the roadside in an open pasture-country with only a few scattered trees about. The curious bloom of the banana is a favourite hunting-place for them, and Banana Humming-bird would be a much more appropriate name than Mango Humming-bird, as I never once saw it on a mango-tree; in fact, I do not think I ever saw a Humming-bird of any kind on a mango-tree. This species is also very fond of the splendid hibiscus flowers. It does not seem to be nearly so plentiful as *A. polytmus*, which appears to be by far the most common of the three kinds found in Jamaica. A very noticeable feature in regard to the habitats of the different sexes of the latter bird is, that whereas the male bird is almost invariably found among dense thickets and deep gullies, especially where the rose-apple abounds, the female bird is promiscuously present in every kind of situation, as often by bleak roadsides, feeding among the convolvuli that grow over the boundary-walls and other flowering plants among the low herbage, as in the haunts of its handsome mate; and it is also very familiar among houses, coming every few minutes of the day to feed among the creepers that commonly grow over the verandas, being so fearless that a spectator a few feet off does not alarm it. As a rule, in rainy weather Humming-birds sit close among thick bushes, waiting patiently for the rain to stop. But on one occasion a female *A. polytmus* came to our veranda and

fed for some time on the flowers there, although it was raining pretty hard at the time and was getting dark. This was about 5.30 P.M.

The female *A. polytmus* rests in a more slim position than does her mate. Her note is exactly the same. I have no record of the note of the *Lampornis*; it seems to be a very silent bird. Its dark colour makes it appear a larger bird than it really is. Its tail is its chief beauty. This is composed of broad feathers, the two central ones being nearly black; the rest are a glowing reddish-purple colour, broadly barred towards the ends with greenish black; extreme tips greyish white. This fine tail is continually flirled widely open as the bird is feeding, and makes a beautiful purple fan. *L. mango* seems friendly towards its own and other species, and at times several will feed amicably together, but as a rule not more than one is seen at a time. *A. polytmus*, on the contrary, frequently appears to live in little colonies, perhaps a dozen or so frequenting a patch of rose-apple trees. This, however, refers only to the male bird.

The tiny *Mellisuga minima* was far less generally distributed than the other two species. It was fairly common at Constant Spring (six miles out of Kingston), and there were one or two in the hotel grounds at Spanish Town; but besides these I saw only two others at Montpelier, and none at all elsewhere. At Constant Spring they were mostly to be found by the roadsides and on the waste pieces of land that were thickly grown with ageratum, which plant they seemed to be very fond of, and which grew in profusion about 3 or 4 feet in height. Here, among butterflies, bees, and banana "quits," they hunted for their prey, and I vainly endeavoured to shoot them with sand; it had no effect upon them at all. I also as vainly tried to catch them in my butterfly-net; they would always keep just out of reach. When resting on a twig, I could sometimes get a butterfly-net within 2 feet of them, and then they would just shoot off like big bees and begin merrily feeding away among the ageratum again. *A. polytmus* can be caught in a butterfly-net with patience. I captured a couple of splendid

males thus one afternoon. I hung a bunch of rose-apple blossoms in the entrance of my net by string, then stalked the Humming-birds and held the net up as near to them as I could reach. One would come down now and then and hover a yard off in front, and then perhaps dash round and hover again close up to the back of the net, and then whirl off up to the top of the tree again. The two I caught came down fearlessly and hovered close up to the blossoms, when a rapid swoop of the net made them prisoners.

The Jamaicans call the *Mellisuga minima* the "Bee Humming-bird," which is an appropriate name for it, as its habits are very like those of a bee, and there is not such a very great difference between the sizes of the two creatures, this little bird being only $2\frac{3}{4}$ inches from tip of beak to end of tail. The negroes in Jamaica call all Humming-birds "Doctor-birds," as they do also in Barbados and Dominica. A boy told me that doctors used the dried bodies for ingredients in some kind of medicine. Of course this is a fairy tale. But I think it is mentioned in a book called 'Obeah in the West Indies,' by J. Hesketh Bell, that the Obi men (sorcerers) use the bodies of Humming-birds as charms in certain cases, I think to protect banana and yam patches from thieves, the blacks always being highly superstitious. This would doubtless account for the name.

The Bee Humming-bird makes an exceedingly loud buzzing. On one occasion I looked among the grass at my feet for what I thought was a big bee or beetle buzzing on the ground, and presently discovered that it was one of these tiny birds slowly droning away among the twigs of a log-wood tree a few yards off. It was not feeding, but slowly buzzing about and settling on twigs and then flying off again, as if not satisfied with its perch. When flying away it looks exactly like a big bee, holding a straight course and flying at a fair pace. It looks very thick-set when at rest. This is chiefly owing to its very short tail. It droops its wings under its tail, which was the constant habit of all the Humming-birds I observed. I have watched it on a plumbago-tree while resting after feeding among the pretty blue

blossoms, singing its little song with great glee. Not much of a song certainly : about three little squeaky, feeble notes, repeated over and over again.

I did not obtain a single specimen of this species. While at Constant Spring I was mostly butterfly-hunting, and the few shots I had at these birds were with sand, which proved futile. I quite expected when leaving this district to find them common everywhere else, but never got another chance of shooting them. The colour of this bird is quite plain : dull green above and dull white below, without any of the splendid metallic colours so generally characteristic of this interesting and beautiful order of birds.

After leaving Jamaica we went to Dominica, stopping a week end at Barbados to change steamers. I saw two species of Humming-birds in Barbados, viz. *Eulampis holosericeus* and one of the little crested species : either *Bellona cristata* or *B. exilis* ; I do not know which, as, the birds being always above me, I was unable to see the colour of their crests. There were several of these feeding among the blossoms that grew on a tree close to the Marine Hotel. I do not know the tree, but in general appearance it was not unlike an acacia and had white (or cream-coloured) blossoms, which smelt very sweet. On this tree were always other small birds feeding, and the Humming-birds took no notice of them and in no way disturbed them, so far as I could see. One *E. holosericeus* here was feeding among the grasses, evidently picking up insects from the heads that had gone to seed.

Dominica has four species of Humming-birds—*Eulampis holosericeus*, *E. jugularis*, *Bellona exilis*, and *Thalurania wagleri*. Here the little *B. exilis* is exceedingly common—much the most plentiful of the lot, while the *Thalurania* is the least common, or, at any rate, very much more local in its distribution, as it is found only up in the high mountains. I do not think I saw it at a less elevation than 1000 feet ; but this altitude is guess-work on my part, as I had no means of finding the height above sea-level. At any rate this bird is found up in regions where one is among the

clouds, and is always liable to get a drenching with rain, although down below it may be brilliantly fine all day, these mountain-peaks almost always having clouds hanging about them.

As soon as one begins to hear the beautiful clear bell-like notes of the *Myiadestes dominicanus* ("Siffleur montagne," in native patois), which are so characteristic of the gloomy damp forests up in these regions, then one begins to look out for the pretty little Wagler's Wood-nymph, which does not appear to be a very common bird, or, if common, is not often seen, owing to its retiring habits. I made two visits for it, but saw few specimens, and only succeeded in shooting three, one of which was too hopelessly smashed up to be of any use as a specimen. These birds are very tame and allow a close approach. They seem to be very sedentary in their habits. I only saw two feeding, all the others being discovered sitting motionless on twigs. From this fact, probably, they appear to be less common than they really are, as it is not easy to discover so small an object among the huge tangle of tropical vegetation unless it betrays itself by movement. These birds sit usually in a bunched-up position and appear very blue in colour, especially when one has been looking at the green *E. holosericeus*.

In hunting Humming-birds in these situations one has to take into consideration before shooting them the possibility of retrieving them when shot, as, although a bird may be perched only a few feet off the mountain-path, yet it may be in such a position that when shot it would fall down the mountain-side, which is often very sheer, and be hopelessly lost among the dense vegetation growing down the sides. So I always observed the habit of taking stock of where the bird would fall before shooting him. The first one of this species that I came across was in such a situation that I could not shoot at it. It was sitting on a twig just off the path and a little below me, with a dense tangle of vegetation growing all down the mountain-side underneath him. So I watched him from a distance of only a few feet and made a sketch of him. He was uttering a feeble little song, with no

sweetness in it, only a series of weak little squeaky notes which would not have been heard many yards off, but still a continuous song. I presently threw some stones gently at it, in hopes of it shifting its position to a more favourable one for shooting at. But he still kept to the same side of the path and began feeding among the flowering shrubs down the mountain-side, and so I lost him. I saw two or three more that day and shot one, but it was smashed beyond repair. My next expedition to the same locality found one of this species—perhaps the same bird—in exactly the same place where I saw the first one, and this time, observing there were some large broad leaves immediately underneath him, from which I could retrieve him without any risk to my neck, I shot him. He fell on to one of these leaves, but before I could get at him had recovered and went whizzing down the mountain-side, and so was lost. After a long hunt in the gloomy forest among dense vegetation, tree-ferns, creepers, rotten logs, stones, swamps, &c., I had similar bad luck with another one, only wounding him, and being unable to follow his course through the dense growth. After that, on my way back, I had better luck and killed a couple of good specimens, not a bit spoilt by the shot. I spied the first sitting on a twig of a flowering tree with white blossoms, luckily on the upper side of the path; so, leaving my pony in charge of the negro boy, I crawled up the bank until I was within shot of him. He frequently came back to the same twig after feeding among the blossoms, this twig being so close to me that I could not shoot without blowing him all to pieces. At last I got a shot as he was feeding, but missed him. However, he did not seem to take that amiss, but went on feeding (his humming is not very loud), and presently came back to rest on his favourite perch. I was a little further away by this time and shot him quite clean. The other I shot was perched on a twig over the pathway in a dark gloomy corner. This was also on a tree with white blossoms.

I never heard the note of this bird, except the little song before mentioned.

These two specimens are almost exactly alike in plumage, one of them being only a trifle brighter in colour. On dissection they proved undoubtedly male and female, the male being the brighter coloured one. The sizes were: ♂ $4\frac{1}{4}$ inches in length, $6\frac{1}{2}$ in breadth; ♀ $4\frac{1}{4}$ in length, 6 in breadth. This surprised me much, as I had a pamphlet by G. E. and A. H. Verrill, 'Notes on the Fauna of the Island of Dominica' [from 'Transactions' of the Conn. Academy, vol. viii. p. 315, April, 1892], kindly given me by Mr. A. Frampton, a resident in Dominica, in which the authors state, when treating of this species, "Sexes very different in plumage." They further state that they only met with one female, which they obtained, and that the males were observed about the nests and *sitting on the eggs*. I had a conversation on this subject with Dr. Nicholls while in Dominica, and he was of opinion that the two sexes of this species are similar in colour, and that Verrill had made some mistake about this. Since my return to England I have further pursued this matter, but find that Gould and Elliot both describe the female as being quite different from the male. Gould also figures a white-breasted female in his grand monograph. I have also examined the series of skins in the British Museum, and among several of the wholly green and blue birds there is a white-breasted one, labelled a female, but the locality is not noted on the label. Both my birds are entirely green and blue. One of the Gould cases in the British Museum appears to me to be wrongly labelled. The birds seem to me to be of this species, but are named *Eucephala grayi*, which is coloured almost exactly like *Thalurania wagleri*, but the green is of a rather yellower tone, and the bird has a red beak, whereas the beak of *T. wagleri* is black, with the lower mandible flesh-coloured for about three-fourths its length from the base.

In its geographical distribution this bird is remarkable. It is described as being found in the north of Brazil, and Gould says it may possibly be found in Guiana, which is nearly on the Equator. Then it is found nowhere else except in this island of Dominica, which is about 15° N. lat. This is very remarkable when we come to consider the numerous islands

between these two localities. How has this isolation come about?*

The beautiful *Eulampis jugularis* is very common in Dominica, and it seems to have an extensive range of country, being found in equal abundance up in the haunts of *T. wagleri* and in the low country right down to the coast. Up in the mountains it will be found frequently sunning itself by the pathway-sides or feeding among banana patches, or among the blossoms of a tree that grows to a good size and has large bell-shaped yellow flowers. Along the coast, wherever there are colonies of native huts it will be found again, feeding among bananas, oleander, and hibiscus. Bananas are favourite hunting-grounds, and where a patch is of any great size one may come across several of the birds. I never saw them in close proximity, except on one occasion, when there seemed to be two or three hunting one patch of rather small dimensions; but it is impossible to tell whether one sees the same bird over again or different specimens, unless they are on view at the same time.

They are quite tame, and being of a fair size are easily discovered, even when at rest, especially as they are fond of sunning their lovely plumage on a conspicuous dead twig by the sides of the paths, and often will not trouble to fly away though one passes within a few feet of them. Almost all the Humming-birds I met with seemed to prefer perching in conspicuous positions, choosing a bare twig outside a bush rather than in the bush itself among the foliage. The male looks splendid as he sits on a bare twig, basking in the rays of the hot sun, by some steaming forest pathway, his tail widely spread and the sun flashing from his crimson-purple throat and breast and from his golden-green wings and curious steely-blue upper and under tail-coverts, the whole set off by the velvety blackness of the rest of his plumage; and a peculiarity is that the metallic colour on his wings extends to the primary feathers. There is considerable variety in the brightness of colour of the plumage, some males being much more gorgeous than others.

* [The old localities are wrong. The species is peculiar to Dominica. Cf. Salvin, Cat. B. xvi. p. 87.—EDD.]

The female is similar in colour, but not so bright, neither is the black part of her plumage so deep and glossy. The steely blue, with a faint tinge of green, of the tail-coverts is quite a peculiar colour, and Gould has missed it in his plate of this species; he has made it much too green. I never saw this bird over water. It seemed to like any sort of locality so long as there were plenty of bananas about. I set up some of these birds at the time (as well as other Humming-birds I obtained) as nearly as I could in the positions I saw them in when alive, mounting them on the Waterton principle, without wires. In skinning Humming-birds one is much struck by the great toughness of the skin, which is a great help, and compensates for the difficulty of manipulation of such small subjects. The muscles on their little carcasses, too, are as hard as wood. Luckily their heads are small, and there is no difficulty in skinning them back to the beak to get at the skull to clean it. The tongue is, to a great extent, on the Woodpecker principle, but is cleft towards the tip, each bifurcation being clothed with minute bristles on the outside edge. The sternum is prolonged back so far that it reaches almost to the end of the vertebræ, covering all the abdominal part of the system. Humerus, radius and ulna are very short.

Eulampis holosericeus was also common in Dominica, but rather less so than *E. jugularis*; but I found this to be a shier bird; it very soon got frightened at being disturbed, when it was useless attempting to get close enough to shoot it (my shooting-range usually being from 10 to 20 feet). Its very position when at rest denotes its shy nature. Instead of sitting quietly with its head drawn back into its shoulders, it seemed always to be on the alert, with feathers close to its body and neck stretched out, looking about in all directions and ready to dash away on the too close approach of the spectator. It often feeds among herbage close to the ground, which I never saw *E. jugularis* do, and seemed especially fond of a plant that grew about 18 inches in height, with globular honeycombed seed-heads, not very unlike our horehound. This plant was always infested with small insects. I found *E. holosericeus* at a good elevation, but not

so high up the mountains as I found *E. jugularis*, and it seems to be more partial to the low country.

The plumage of the two sexes is similar, but that of the male is brighter and richer than that of his mate. Although these birds are more shy than the others, they seem to be fairly tame when not disturbed, and might frequently be seen feeding among the flowering trees in the town (Roseau) and coming to the bananas by the natives' huts; but they are more easily alarmed and do not allow so close an approach. Banana patches are always a favourite hunting-ground of this species.

I see that Gould makes two species of this bird, one of which he calls *Eulampis holosericeus*, as named above, and the other *E. chlorohema*. After looking through a large series of skins in the British Museum there seems to be little cause for such discrimination, as the blue band across the breast, on which Gould chiefly bases his distinction, varies in individuals from a mere spot to a band right across the breast, and it seems impossible to draw a line of demarcation between the two supposed species.

Bellona exilis is very common in Dominica, and may be seen almost everywhere except up in the high mountains, for I saw very few up in the districts haunted by *Thalurania wagleri*. The male of *B. exilis* seems to feed promiscuously upon any plant, bush, or tree that has flowers. His glittering golden-green crest seems always to be erect; I do not think that I ever saw it laid back; but he probably lays it flat when flying from one place to another. In profile he while sitting still shows his crest-feathers to be absolutely vertically erect, and they appear thus like two or three lines springing up from the head, though of course from a front view the crest appears like a broad flat mass of feathers tapering away to a sharp point. His figure while at rest is generally rather slim, his tail slightly raised from the slope of his back, and his beak nearly horizontal. Telephone-wires are a very favourite perch of his, failing which any bare exposed twig will suit him. He is quite a soberly clad little bird, except for his crest, which glitters like an emerald star as he hovers

round the flowers seeking his food. The humming of this bird is not so loud as that of the Jamaica *Mellisuga minima*, but he can fly faster. Wherever there are flowers, there this little bird will be found, from the white cedars growing from the shingle on the beach to the densest tangle of forest up in the mountains. I do not think I ever saw one feeding among the banana-blooms, but every other flower it seemed fond of. If there is a choice, I should say it was for the blossoms of the lime-trees (which here grow in great quantities and smell very sweet), lantana, allamanda, and a little kind of pea, with yellow flowers, which the negroes grow. There were also a few trees, not unlike acacias, with white blossoms, of which these birds were very fond, and I have seen six or eight of them on one small tree of this sort, all busy hunting, ever and anon chasing each other with shrill chirps, generally more males than females. They are inquisitive, and will sometimes come and hover a few inches from the muzzle of a gun that is pointed at them.

Three nests were brought to us, but whether they were owned by this species or by *E. holosericeus* I do not know. There were no eggs in them. They were very neat, and looked like tiny Goldfinches' nests, made principally of white cotton down, with little bits of lichen, moss, and fine grass-fibres, the foundation made of coarser bits of dead grass, and were all placed at the end of a drooping twig, just where the terminal leaves shoot out, these fringing out just below the nest.

I had many a hunt for the nests in places that were swarming with the males of *Bellona exilis*, thinking that the females were probably sitting on their eggs hard by, but I never succeeded in finding any. I found the beginning of a nest once, placed on a rank weed growing from the bank of a mountain pathway, I should think at an elevation of over 1000 feet. I saw the male bird fly there, and on lifting up a fern-leaf, which was hanging just over the place, discovered this beginning of the nest. I visited it twelve days afterwards, but, although there was more done to it, it had evidently been deserted.

This species is rather quarrelsome, the males chasing each other about continually, flying at a marvellously rapid pace, screaming shrilly the while.

The female bird differs considerably from the male in having no crest, a whitish-grey breast instead of dark blackish grey, and the green on her upper plumage is rather more inclined to a golden hue.

Being so small, it was found difficult to shoot them without spoiling them as specimens. I mostly used a 28-bore gun, which, although really too large for being quite successful as a Humming-bird gun, yet was a very useful all-round weapon, as I was ready with it for birds of all sizes, and on more than one occasion have returned from a hunt with a Buzzard and one or two Humming-birds. For the small quarry I cut down the cartridges to about an inch in length, putting in a very small pinch of powder and a tiny charge of very fine dust-shot, one thick felt wad between the two, and a thin cardboard wad over the shot. Even with a small charge like this it was very uncertain work, sometimes blowing the Humming-bird all to pieces, and at other times, at just as close or closer ranges, apparently missing it; so I was never sure whether I was going to secure a decent specimen or not. Of course the reason was that such a small charge in a comparatively wide bore made a very uncertain pattern, the bulk of the shot sometimes being on the object and at others being all round it. A .410 gun or a saloon pistol with dust-shot cartridges would have been a better weapon. For part of my time in Dominica a gentleman there, Mr. A. Frampton, kindly lent me a .410 gun. I cut the cartridges down very small, and found that it shot Humming-birds very clean as a rule, and I obtained some first-rate specimens with it. The Humming-birds that came under my observation apparently did not begin to feed until the sun was well up, and then as soon as a hillside is thrown into shadow by the sun sinking behind it no more of these birds will be seen, while on gloomy dull days they will not be seen in such profusion as on a bright sunny day. Like butterflies, they seem to be about mostly in the hot rays of the sun.

My excursions in Dominica were limited, extending only to daily rides and walks from the town of Roseau. Having spent three weeks here, we left for Tobago, passing Martinique, St. Lucia, Barbados, St. Vincent, Grenada, and Trinidad, stopping a few hours at each place to take in and discharge passengers and cargo, and at Barbados staying two days. Arrived at Tobago, we met with a great disappointment at the outset. Sir Napier Broome, the Governor of Trinidad, under whose jurisdiction is also Tobago, refused our application to shoot birds. This was most unreasonable, as the permission might have stipulated a limited number of specimens of each species, as was the case in Jamaica; and our stay being a short one, about three weeks, I could not possibly have made much of a raid, as I was shooting and skinning single-handed. According to the Hon. James Kirk's list of birds of Tobago, there are seven species here (none of which I was destined to shoot), all different from those I had previously met with. However, although I could not shoot I could observe, and while spending all my time here in landscape-painting, I nevertheless kept my eyes on the look-out for Humming-birds that might come across my path. As might have been imagined, from not especially hunting for them, my notes are here very meagre.

In Kirk's list of the birds of this island the following seven species of Humming-birds are put down, all of them under the generic name of *Trochilus*:—*T. hirsutus*, *T. latipennis*, *T. mellivorus*, *T. viridis*, *T. moschitus*, *T. auduberti*, and *T. mango*.

Of these I saw only two species alive, viz., *Glaucis hirsuta* and *Chrysolampis moschitus*: one or two of the former, but the latter were fairly plentiful, especially females, and I believe the Emerald Humming-bird is not uncommon. A black boy brought me a young bird he had shot with a catapult, which I believe to be of this species. The throat and lower neck-feathers are emerald-green, but are not fully grown; body-feathers and under tail-coverts grey, those on upper breast tipped with bronze-green; lower abdomen white; head and upper part of back dull golden green,

shading into reddish brown on lower back and upper tail-coverts (these feathers being greyish black, but broadly tipped with reddish brown); primaries and tail bluish black. We purchased seven or eight skins here, among which were an Emerald and two *G. hirsuta*, the rest being *C. moschitus*. One hen bird of this last species used to come every few minutes during the day close to our veranda to feed among the blossoms of a curious plant, with thick fleshy leaves and a cluster of scarlet shoe-shaped flowers growing from the apex of the plant. This little bird always hovered with its legs hanging down. On examining the flowers I found them to be always swarming with small ants. We had several nests brought to us while here, all containing eggs, mostly with the full complement (two). But it was some time before we could make the stupid boys understand that we wanted to see the nests "*in situ*," and we saw only two thus, one of which I found myself. One of these was a nest of the *C. moschitus*, and was in a rather peculiar situation. A patch of young guavas of several acres in extent on a slight hillside had recently been burnt, so that there were only scattered brown sticks left, with a few shrivelled leaves hanging on to them, these sticks being only about 3 feet high. On the top of one of these sticks, exactly the height of my riding-whip from the ground, the Humming-bird had chosen to build its nest, which, being made of white material, was very conspicuous for some distance away among such bleak and brown surroundings. The nest was supported by a twig that grew away at an angle from the main stick, and contained two eggs. The bird at first was very shy, and for some time would not go near the nest, but sat about in the neighbourhood preening her feathers, sometimes spreading her tail wide open and stooping her head and neck forward with all her feathers bristled out, as if enjoying the hot rays of the sun. So we stretched ourselves flat on the ground, about 15 yards off, and waited patiently. At last she went to the nest, and by the aid of my field-glasses I made sketches of her position on the nest. She sat with her wings high above her tail, her neck and head high up, and beak almost horizontal.

Afterwards I made a careful sketch of the nest and eggs "*in situ*." While so engaged the hen bird came and hovered once anxiously within a few inches of my head. Another hen bird also came to look on, and the two chased each other about for a time. I saw nothing of the cock bird. A few days afterwards, while riding in the same direction, we expressed a wish to visit the nest again to see whether the eggs were hatched, but were told that it had been destroyed. The negroes take every Humming-bird's nest they can find and sell them to visitors coming past the island on the steamers; but this wholesale destruction by the residents appears to be passed over unnoticed, although it is quite a different case when an occasional visitor comes to kill a few birds in the cause of science. While here I saw a wretched darkie boy swaggering about with a muzzle-loading gun, who asked me whether I wanted any Humming-birds. I told him "No," and had half a mind to lay an information against him.

The Humming-birds' nests we had brought to us appeared to be of three different sorts, and the boy who brought them professed to be very positive as to their identity. He told us that the smallest one on horizontal twigs belonged to the Ruby-crest, the rather larger ones on more upright twigs to the Emerald, and the large, untidy, pouch-shaped ones hanging to the end of a shred of banana-leaf to the Doctor Humming-bird, which is the name they give here to the *Glaucis hirsuta*. Most of the nests of the two first-mentioned kinds are placed on small bamboo-twigs and are very beautiful. The smallest of them measures only $1\frac{1}{4}$ inch in diameter, by $\frac{3}{4}$ of an inch in depth, outside measurements. It is placed on a horizontal bamboo-twigg, at one of the joints where two other twigs sprout out at one side, helping to support it. It is not easy to tell what it is made of, but it appears to be chiefly composed of seed-husks of grass, neatly clotted together into a compact mass by cobwebs, which also bind firmly round the main stem and the side twigs, while the outside is studded with little chips of very fine, sealy, bark-like material. This nest contained one egg, very large in proportion to the size

of the nest. Another beautiful one is made mostly of cotton, cobwebs, and small pieces of silver-grey lichen. Another has a good deal of moss in its composition, and one that is composed almost exactly of the same material as the very small one just mentioned, but is a larger nest, is merely saddled on to a horizontal twig, without any side support at all. One of those attributed to *Glaucis hirsuta* is 6 inches long outside. The nest inside rises higher at the back where it joins on to the leaf, measuring $2\frac{1}{4}$ inches in depth here, while in front it measures only $1\frac{1}{4}$ inch in depth. It is not a very compact structure, the egg being almost visible through the sides. It is made of fine fibres, felted together outside by spiders' webs, with a small leaf here and there. It ends in an untidy tail, mixed with little bits of stick, dead leaves, &c. There is no lining inside, and the leaf to which it is attached is plainly discernible through the fibres of which the nest is made.

The one I discovered myself had no eggs in it, and was composed of dry moss, grass-seed husks, and cobwebs, the outside being a mass of shreds of the dried peel of bamboo-twigs. There was another nest not many yards away on another bamboo, but rather higher up, about 20 feet or so. This was unfinished, and we left it. In this clump of bamboos, too, were several nests of the little "Sugar-eater," which I think is *Cæreba cyanea*. I saw no Humming-birds near this clump, so do not know to which species the nest I found belongs.

Passing from Tobago, we made our last stay at Grenada. Here the Governor, Sir Charles Bruce, was most kind to us in every respect, and readily gave us a permit to collect birds. There are but three species of Humming-birds in Grenada—*Glaucis hirsuta*, *Eulampis holosericeus*, and *Bellona cristata*. This latter bird is very much like *B. exilis*, except that his crest, instead of being golden green entirely, has the upper half of it of a rich purplish blue, and the colour of his upper plumage is of a bluer shade than in *B. exilis*. I do not think that the hen birds of these two species are to be distinguished one from another.

Gould makes out a further species of *Bellona*, which he calls *B. ornata*, and which he distinguishes from *B. cristata* by the tip alone of the crest being blue. I have examined a large series of skins of both of these in the British Museum, and many birds were undoubtedly to be so distinguished; moreover, the blue on the crest of *B. cristata*, as a rule, appeared to be of a more purple hue than in *B. ornata*. But there were specimens the species of which it would be difficult to determine. In those skins that I examined there is a certain amount of variation in the colour of the central rectrices. In those labelled *B. cristata* these feathers are all of a purplish hue, but one or two specimens have greenish edges to these feathers. Those labelled *B. ornata* have in some specimens these feathers purplish, and in others a greenish hue entirely, like that of *B. exilis*. On the whole I am inclined to think that there is not enough ground to make these into two species, but that some specimens of the same species are rather richer in colour than others, just as we see in other Humming-birds—*Eulampis jugularis*, for instance—some specimens being much brighter-coloured than others. In Grenada *Bellona cristata* is exceedingly common and may be seen everywhere, especially on the telephone-wires. Its habits are exactly similar to those of *B. exilis*. It has a double note when chasing other Humming-birds—a quickly repeated shrill note, rather resembling the syllables “witt-tu, witt-tu.”

Glaucis hirsuta appeared to be far from common in the neighbourhood of St. George's, where we were quartered. I saw it only up at the Grand Etang; and after spending a day here in search of it, I only succeeded in obtaining one specimen. I saw several others, but they were invariably flying across the road at a tremendous pace and disappearing into the forest, which here is composed of immense trees, very dense and thick. This must be over 1000 feet elevation. I tried to pursue my hunting inside the forest for a little time, but was glad enough to get out again, as it was full of a very savage kind of tall grass, which grew 6 feet high, had saw-edges, and cut like a knife, also clinging to one's clothes

and making progress difficult. As these birds fly they utter a high-pitched note like "teep, teep." The bird I shot was settled on a broad grass-blade just off the side of the road. It was in the company of another, and I waited there for some time in hopes of obtaining this one also, but I did not get a chance. I saw it several times flash across the road, uttering its "teep, teep"; but I do not profess to be able to shoot rocketing Humming-birds. Once it settled on the telephone-wire, but would not allow a close enough approach for my small charge.

I saw a few *Eulampis holosericeus*, but having already obtained this species in Dominica, I did not molest them further than to shoot one specimen to make sure of its identity. This one was too much smashed to be of any use as a specimen.

In concluding these notes I must express a hope that some one more learned than myself will corroborate my views as to the colouring of the plumage in the different sexes of *Tkalurania wagleri*. I must also tender my best thanks to Sir Henry Blake, Governor of Jamaica, Mr. Templar, Administrator of Dominica, and Sir Charles Bruce, Governor of the Windward Islands, for their kind permit to collect birds; also to Dr. Nicholls, of Dominica, for the loan of all his books on West-Indian avifauna, which I found most useful during my stay in Dominica.

XLVI.—*A Visit to Dassen Island, the home of the Jackass Penguin.* By W. L. SCLATER, M.A., F.Z.S., M.B.O.U., Director, South African Museum.

IN Cape Town and its neighbourhood may frequently be seen Malays and other coloured men carrying large green eggs, which they sell to the inhabitants at about two shillings a dozen. These eggs are the product of the Black-footed or Jackass Penguin (*Spheniscus demersus*), the only member of this group of birds found on the South African coast. They are brought to Cape Town chiefly from Dassen Island,

and are a source of considerable revenue to the Colonial Government.

Being naturally anxious to see the breeding-place of the Penguins, I took an opportunity afforded me of going to the island in the company of an officer of the Public Works Department, who was paying his monthly visit of inspection to the lighthouse there.

Dassen Island lies some forty miles to the north of Cape Town up the coast, being about six miles from the nearest point of the mainland, and the island or its lighthouse is the first bit of South Africa seen from the steamers when arriving from England.

Leaving Table Bay in a small steamer about 1 A.M. on the 8th of July, we reached the island at about 6.30, just before daybreak. We landed close to the house of Mr. Almeda, the Agent of the Colonial Government who has entire charge of the island, and soon after proceeded to the lighthouse, which is situated towards its southern extremity about a mile distant. The island is low and flat, and hardly rises more than 20 or 30 feet above the level of the sea; it is about two miles long and one mile across at its widest point. There are no trees on the island, but at the time of my visit it was covered with a fresh growth of green herbage, which later on, I was told, would attain a height of 5 or 6 feet. Everywhere the ground was riddled with short wide burrows, not more than a foot or so in depth, and each of these burrows was the home of a pair of Penguins. It was impossible to look in any direction without seeing countless numbers of these birds. When approached, they as a rule scuttle down into their burrows and lie down there, twisting their heads round and round and looking at one in the most comical way possible. If molested they endeavour to defend themselves by snapping with their bills, and are able to inflict a considerable bite if a hand or foot be placed incautiously near them. If prevented from retreating into their burrows, they waddle away in the usual upright position, and if hard pressed flop down on their bellies and scramble along on all fours, so to speak, endeavouring if possible to reach the sea.

Here and there could be seen solemn troops marching in regular order two and two across the rocks that line the beach, to the sea, to get their breakfast. If an approach was made with care and aided by a little gentle whistling, it was quite possible to get within three or four yards of the birds. According to the information I obtained from Mr. Almeda, the Penguins are to be found breeding here the whole year round, and certainly I found on this occasion both eggs and young in various stages of development. The egg-season lasts from the 15th of February to the 15th of August, and it is only during that time that they are collected. Mr. Almeda has a number of men in his service who march every day in a long line across the island in different directions, each man provided with a basket and a kitchen ladle tied to the end of a long stick, which he uses for scooping the eggs out of the burrows from underneath the birds. The average number of eggs obtained in this way amounts to about 300,000 per annum. This does not include the incubated and broken eggs, so that the number taken altogether must be not less than half a million, and the revenue derived from this source reaches upwards of £700 a year.

The other birds which I observed on the island were first of all Gulls of two species, *Larus dominicanus* and *Larus hartlaubii*. These two Gulls are also to be found everywhere along the coast in the neighbourhood of Cape Town, but do not breed, so far as I was able to ascertain, on Dassen Island. The Sacred Ibis (*Ibis æthiopica*), known to the Dutch Colonists as the "Schoorsteenveger," or Chimney-sweeper, was also seen on Dassen Island, and is stated to breed here in considerable numbers, although I did not myself find the nests.

The most important and numerous, however, of all the birds inhabiting the island are the Cormorants, or Duykers (Divers) as they are called in South Africa. Of these, no less than 4 species breed here; these are the large White-breasted Duyker (*Phalacrocorax lucidus*), the Trek Duyker (*P. capensis*), the Bank Duyker (*P. neglectus*), and the Reed Duyker (*P. africanus*).

There is only one other species of Duyker found in South Africa; this is the European Cormorant (*P. carbo*), which can be at once distinguished by its crest and by the white patch on its thighs. This bird is apparently rather rare here, but there is a stuffed specimen in the South African Museum which was obtained in the Caledon district.

The White-breasted Duyker (*P. lucidus*) is not very numerous on the island; it was breeding at the time of my visit, but unfortunately, owing to want of time, I was unable to visit the nests. It is readily known by its much larger size and by its white underparts. The Bank Duyker (*P. neglectus*) is smaller and of about the same size as the Trek Duyker (*P. capensis*), from which it can be distinguished by the absence of the naked yellow skin beneath the eye and round the base of the mandible, which is so characteristic of the Trek Duyker. Furthermore, whereas the iris of the Common Duyker is entirely green, that of the Bank Duyker is yellow in its upper moiety and green beneath.

I found the Bank Duyker breeding towards the north end of the island. Its nest was constructed of seaweed, and in it were three eggs of the usual chalky-blue colour, measuring about 2.25×1.50 inches. The birds were so bold and fearless that it was possible to walk right up to the nest and pull them off it.

The Reed Duyker (*P. africanus*) is a smaller bird with a much longer tail. Of this species I found a number of nests all close together, almost interlaced in fact, covering a low rock not far from the other Duykers. These birds, however, were not so tame as the Bank Duyker; they flew off when we got within six or seven yards of them. The nest in this case was built entirely of sticks, and the eggs closely resembled those of the other species, except that they were smaller, measuring 1.75×1.25 inch.

Finally the fourth and last Cormorant found here is the Trek Duyker (*P. capensis*). This bird is of about the same size as *P. neglectus*, but can be at once distinguished by the yellow skin at the base of the beak. It is far the commonest of all the Duykers in the western part of the colony, and

breeds in very large numbers on Dassen Island during the months from August to January.

This bird is a very important one commercially, as from it is derived the guano which, together with the Penguin eggs, yields a considerable income to the Cape Government. The guano is scraped up from the rocks on which the Duykers sit, and also from the nests after the breeding-season is over. The time for collecting the guano begins in December and continues until May, after the Duykers have finished breeding. I was told by Mr. Almeda that about 800 tons had been collected during the seasons 1895-96.

I left the island about 12 midday, reaching Cape Town about 4 o'clock the same afternoon, after a very smooth and enjoyable passage. In addition to the birds already mentioned as occurring on the island, I was able to distinguish during the journey home the Grey-backed Albatross or Mollymawk (*Diomedea leucophrys*). The Wandering Albatross (*D. exulans*) is not commonly seen until considerably further south. Another bird observed in large numbers on this excursion was the Cape Solan Goose, or Malagash (*Sula capensis*). This bird, which is also a great guano-producer, is never found breeding on the same islands as the Penguins and Duykers. It nests, I was told, on some islands in Saldanha Bay; further north, on Ichaboe, which is in the neighbourhood of Angra Pequena, in German South-west Africa; and on Bird Island, in Algoa Bay. The only other bird commonly seen in these waters is the so-called "Cape Hen" (*Majaqueus æquinoctialis*).

In conclusion, I may say a few words on the subject of the working of these guano-islands, taken from information derived from the Government reports.

The islands are nineteen in number. They are, beginning from the north:—Ichaboe and Penguin Islands, off Angra Pequena; Elephant's Rock and Bird Islands, off the coast of the Van Rhijnsdorp division of the colony; an islet in Lambert's Bay, Clanwilliam division; North-west Rocks, St. Helena Bay; Paternoster Island, Marcus Island, Jutten Island, Jacob's Rock, Malagash Island, Schaapen-Meeuwen



BLACK-FOOTED PENGUINS AT Sالدانیا BAY.

Island, Foundling Island, Yzerklip Rock, and Dassen Island, off the Malmesbury division coast; Vogelstein, Duykerklip in Hout's Bay; Seal Island in False Bay, off the coast of the Cape Division; Dyer's Island, off the Caledon coast; the islands near the mouth of the Ratel River, Breedersdorp division; Seal Island, in Mossel Bay; and St. Croix Island, in Algoa Bay.

From these islands 2857 tons of guano were obtained during the season 1893-94, and 3200 tons in 1894-95.

The guano is shipped in bulk to Cape Town, where it is sold directly to the farmers of the western part of the colony, the price per ton being fixed at £6 10s. The profit derived from this industry amounted in 1893-94 to £12,600, and in 1894-95 to £13,100. The report for the current year has not yet been issued, so that no figures can be given for the season 1895-96.

The accompanying illustration (p. 524) has been prepared from a photograph most kindly given to me by Dr. Stark, M.B.O.U. It was taken, not on Dassen Island itself, but at Saldanha Bay, where Penguins are also found breeding, but it very accurately represents the scenery of the islets and the attitude of these birds.

XLVII.—*On the Birds of the Philippine Islands.*—Part VIII.*

The Highlands of Negros. By W. R. OGILVIE GRANT.
With Field-Notes by JOHN WHITEHEAD.

ON the 28th of February Mr. Whitehead once more left Manila *en route* for the island of Negros, which lies in the centre of the Philippine group, and remained there till the end of April. Concerning this expedition he writes as follows:—"After much trouble, sun-broiling, starvation, want of baths, &c., I commenced collecting at the foot of the active volcano Canloon, in Central Negros." This mountain has an elevation of about 7000 feet. He then goes on to give a list of the principal birds obtained, adding some

* For Part VII. see p. 457.

interesting notes and observations. He gradually worked his way up the mountain to an elevation of over 6000 feet, where he remained camped for three weeks. The Ornis was, however, so poor that he did not think it worth while to stay longer. Perhaps the most interesting species met with at this high elevation was a new Blackbird (*Turdus nigrorum*) with a brownish slate-grey breast and dark brown back, quite distinct from anything previously known. This bird was resident, and both young and eggs were obtained.

The commonest bird was a large and brilliantly coloured Silvereye (*Zosterops siquijorensis*), which was met with as high up as the fumes, fires, and eruptions of the volcano permit vegetation to approach its summit. The letter continues: "I climbed to the summit of the cone and had a look down into the crater, from which were issuing clouds of steam, accompanied by a dull roar like that of the distant sea. It really made one feel quite nervous, and my men were in such a state of fear that they could not stand erect. To reach the edge of the crater the climb is slightly dangerous, most of the mountain being very steep and covered with small loose stones which give way at every step. The fumes of the volcano were so strong that my canvas tenting (Willesden) has been changed to a beautiful brown. Really, a poor wanderer like myself sees and enjoys this wonderful world more than many of the richest millionaires!"

On returning to Iloilo in the island of Panay, Mr. Whitehead found my two letters of the 17th and 22nd of March awaiting him; from these he learned that the Samar collection had been most probably destroyed by fire, as has been already narrated in the introduction to my previous paper on the birds of Mindoro. It had been his intention to visit the mountains in the north of Panay, but he now decided to return once more to Samar and repair the loss he had sustained. To reach this island he was obliged to return to Manila, there being no direct steamers from Iloilo to Samar.

Three of the birds collected by Mr. Whitehead are new:— a Blackbird (*Turdus nigrorum*), a Shortwing (*Brachypteryx brunneiceps*), and a Shama (*Cittocincla nigrorum*). There

are also three other species which I now describe for the first time:—the Basilan Oriole (*Oriolus basilanicus*), the Cebu Cuckoo-Shrike (*Artamides cebuensis*), and the Parrakeet from the island of Mantanani (*Tanygnathus salvadorii*).

Very few mammals were met with. The collection contained one specimen of a wild cat (*Felis bengalensis*) and some rats obtained at an elevation of about 6000 feet; the latter have not yet been critically examined, but are probably merely a form of *Mus rattus*. Mr. Whitehead has also sent home a collection of insects and a good many botanical specimens, while a number of reptiles and other specimens preserved in spirit will follow by a later vessel.

1. *SPILORNIS PANAYENSIS*, Steere, List Birds & Mamm. Philippines, p. 7 (1890).

Messrs. Bourns and Worcester have united the pale form from Panay, Guimaras, and Negros with typical *S. holospilus*, but after a careful examination of the large series of Philippine Serpent-Eagles in the National Collection I cannot agree with their conclusions, and I think Prof. Steere was justified in separating *S. panayensis*. Of this form I have now six examples before me, viz.:—an adult male (type) from Panay, an adult (not sexed) from Guimaras, an adult female (type) from San Antonio, Negros, and two adult males and a female from the Canloon volcano, North Central Negros, sent in Mr. Whitehead's present collection. All six birds are perfectly similar one to another in the pale colour of their plumage, and, as will be seen from the measurements given on p. 528, agree perfectly in size, all being considerably smaller than typical *S. holospilus*.

Messrs. Bourns and Worcester make the following remarks [*cf.* Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 44 (1894)]:—

“Dr. Steere has attempted to separate the representatives of this genus from the Central Philippines under the name *S. panayensis*, on the ground that they are smaller and lighter in colour than is *S. holospilus*. We find that both light and dark birds occur throughout the range of the

species in the islands. We have very dark and richly coloured birds from the central islands, *but we do not find any constant difference in size* between them and birds from other parts of the group. We think that *S. panayensis* was founded on differences due to change of season and to individual variation, and believe that the species is not a valid one."

Unfortunately they do not specify from which of the central islands these dark and richly coloured birds were obtained, but I think from the evidence before me it may fairly be assumed they did not come from Panay, Guimaras, or Negros. We have dark examples from Cebu and Leyte, which are perfectly similar to specimens from Luzon (whence the type of *S. holospilus* was described) as well as to those from the southern islands of Mindanao and Basilan. The following is a list of the localities from which we have examples of the two forms:—

Spilornis holospilus (Vig.).

		Wing.	Tarsus.		Wing.	Tarsus.
Luzon.	Male.....	13·9	3·25	Catanduanes.	Female	14·8 3·4
"	"	13·2	3·25	Marinduque.	Male..	13·3 3·2
"	"	13·75	2·35	Cebu.	Male	13·2 3·2
"	(Notsexed.)	13·9	2·5	"	Female	13·8 3·1
"	Female....	15·2	3·2	"	" (in	
"	" (Imm.)	15·2	3·55		moult).	13·3 3·15
"	"	14·8	3·45	Mindanao.	Female .	13·8 3·05
"	" (Imm.)	14·6	3·35	"	"	13·7 3·25
"	"	14·6	3·25	"	"	13·6 3·1
"	"	14·4	3·3	"	"	13·25 3·35
"	"	14·1	3·25	"	"	13·0 3·25
"	"	14·1	3·3	Basilan	"	12·7 2·85
"	[Sexed female, but probably a male.]	13·3	2·95			

Spilornis panayensis, Stcere.

		Wing.	Tarsus.
Panay.	Male (type).....	12·5	2·9
Guimaras.	(Not sexed.)	12·5	3·1
Negros.	Male	11·8	3·05
"	"	12·3	2·9
"	Female	12·2	2·8
"	" (type)	12·2	2·75

It will be seen from these tables of measurements that northern examples of *S. holospilus* from Luzon, &c., are considerably larger than birds from Mindanao and Basilan, but even the latter are larger than Panay, Guimaras, and Negros birds, and, taking into consideration the much paler colour of the plumage in the birds from the latter islands, I think that *S. panayensis* may fairly be recognized as a distinct form.

In an adult female of *S. holospilus* from Leyte the white spots on the wing-coverts and scapulars are unusually developed, each feather being ornamented with two or more pairs of ocelli, the subterminal pair (which are not concealed) being as clearly marked as the basal pair or pairs. This gives the wings the appearance of being strongly spotted with white, but is no doubt merely an individual character.

2. *FALCO SEVERUS* (Horsf.) ; Grant, Ibis, 1895, p. 439.

A fine adult female of the Indian Hobby was obtained on the 23rd of March.

3. *FALCO ERNESTI*, Sharpe ; Grant, Ibis, 1895, p. 438.

Falco atriceps, Eagle Clarke, Ibis, 1895, p. 476 [specimen examined].

Although Mr. Whitehead did not send home an example of this very dark-coloured insular form of the Peregrine Falcon, he met with the species breeding high up on the Canloon volcano and managed to shoot one of the old birds, but was unfortunately unable to secure it. He gives the following interesting account:—"I have had one great misfortune. I found the eyry of the Peregrine, and after much trouble succeeded in reaching the top of the cliff above the nest, but it was in such an impossible place—about 1000 feet straight drop—that I did not think it advisable to send my men down by the miserably thin baggage-ropes to the youngsters we could plainly hear squealing in the nest. Both the old birds settled quite close, but always over the edge of the precipice, and when at last I did shoot one it fell and lodged on a ledge about halfway down the cliff. This

ledge we tried to reach for the next two days, but as there was no getting at it I lost the bird. The other bird was busy when I left, bringing up the family, which have my very best wishes ! It was indeed a lovely sight to see the pair of Peregrines, as black as coal on the back, with the skin round the eye, as well as the cere and feet, bright yellow, and their chests reddish brown and white, shading into deep ash-blue on the underparts. They were sitting within twenty yards of me and did not seem much disturbed by my presence, as one of them deliberately scratched its head with its foot ! The only thing they did not like was a biscuit-box on the end of a rattan-cane which we sent over the cliff to move the female. I did not get over losing the bird for days."

Through the kindness of Mr. W. Eagle Clarke, I have been able to examine the immature Peregrine from Negros which he referred to *Falco atriceps*, Hume (*cf.* Ibis, 1895, p. 476). This bird is, as I felt sure it must be, an immature example of *Falco ernesti*, Sharpe, which is really a very distinct form of *F. atriceps*, the type of which is before me. *F. atriceps* is no doubt synonymous with *F. peregrinator*, Sundev. [*cf.* Blanford, Faun. Brit. Ind., Birds, iii. p. 415 (1895)]. In adults of the latter the predominating colour of the underparts, including the sides and flanks, is rich reddish brown, tawny, or buff, and the black bars, if present, are wider apart and not nearly so strongly marked ; whereas in adults of *F. ernesti*, though the breast is occasionally washed with fulvous, the sides, flanks, and belly are dark slate-grey or bluish grey, and the whole of the under surface below the crop is thickly covered with rather wide, close-set black bars, giving these parts a very dark appearance.

Even among immature examples *F. ernesti* is easily distinguished from *F. peregrinator*, the whole plumage being much darker and the oblong marking on the under surface much blacker. In the immature bird recorded by Mr. Clarke, one feather of the adult plumage is present on the left flank, and this alone is sufficient to identify the bird as *F. ernesti*.

It seems pretty certain that *F. peregrinator* is *not* found in

any of the Indo-Malayan Islands, and no doubt the Rev. H. H. Slater has correctly referred the *F. melanogenys*, Rickett (*cf.* Ibis, 1894, p. 223), from Foochow, to this continental form.

4. *Ninox philippensis*, Bonap. ; Grant, Ibis, 1896, p. 110.

Mr. Whitehead's Negros collection contains three adult examples of a little Hawk-Owl, and I am in considerable doubt as to whether this form should not be separated from typical examples of *N. philippensis* from Luzon. I have before me at the present time nine examples from Luzon, two from Guimaras, four from Negros, and one from Siquijor. All seven birds from the three last-mentioned islands differ very considerably from Luzon specimens. The latter have the chest and breast mostly tawny-brown, shading into pale tawny towards the edges of the feathers, and the belly and flanks whitish, with rather ill-defined brownish-red middles. In Negros birds, as well as those from the other central islands already mentioned, the feathers of the chest and breast are chocolate-brown edged with *white*, and the rest of the underparts are white, with fairly wide and clearly-defined shaft-stripes of a dark brownish-red colour:—

The general impression conveyed is, that the Luzon birds have the underparts tawny-brown suffused with white on the belly and flanks, while in birds from the central islands the chest and breast, as well as the rest of the underparts, are white, clearly striped with reddish brown. These birds remind one of small examples of *Ninox japonica*, though of course the latter has the stripes on the underparts of a much darker colour. It is quite possible that it may be found necessary to separate the birds from Negros, &c., under some distinctive name, but before doing this I should like to have more material from the adjacent islands.

5. *Corone philippina* (Bonap.) ; Grant, Ibis, 1895, p. 252.

An adult female of the Philippine Crow was obtained on the 3rd of March.

6. *ORIOLOUS CHINENSIS*, Linn. ; Grant, *Ibis*, 1896, p. 111.

Adult and immature females of the Chinese Oriole are perfectly similar to those sent by Mr. Whitehead in previous collections.

7. *ORIOLOUS STEERII*, Sharpe, *Cat. B. Brit. Mus.* iii. p. 213 (1877).

As Mr. Whitehead's collection contains a nice series of Steere's Oriole, I shall take this opportunity of making some remarks on this and the allied species :—

The Masbate and Negros birds have been named *O. nigrostriatus* by Messrs. Bourns and Worcester, and are said to differ from *O. steerii* in having "the lores, chin, throat, and upper breast decidedly darker ashy, and the mesial stripes of feathers of breast and abdomen broader and much deeper black, the general colour of wing darker, and the washing on the inner webs of quills white instead of yellow." They are, however, mistaken in supposing that the type of *O. steerii* comes from Basilan. It is quite true that Dr. Sharpe mentions Basilan as well as Negros as the habitat of his *O. steerii*, and that, as Messrs. Bourns and Worcester have shown, the Negros and Basilan birds belong to perfectly different species; but a glance at the original description and figure (*cf.* *Cat. B. Brit. Mus.* iii. p. 213, pl. x., 1877) is sufficient to show that the Negros bird is the one described, and therefore the type of *O. steerii*. Dr. Sharpe states that in *O. steerii* the under wing-coverts are grey like the breast, the outermost ones with olivaceous edgings; the ear-coverts dull yellowish olive; the body below the grey breast white, very broadly streaked with black; and the outer tail-feathers black, with a large spot of yellow near the tip of the inner web. These combined characters can apply only to the Negros bird. Under these circumstances *O. nigrostriatus* becomes a synonym of *O. steerii*, and I am obliged to give the Basilan bird the new name *basilanicus*.

Although Lord Tweeddale included the specimens collected by Mr. Everett in Basilan with *O. steerii* from Negros, he expressed the opinion (see *P. Z. S.* 1877, p. 757) that "the

Basilan form will probably prove to be a third representative species."

In the British Museum collection there is only one adult male specimen of *O. steerii* from the island of Masbate. This example differs slightly from the typical Negros bird in having the stripes on the chest and belly rather narrower and not quite of such a deep black colour. This difference is very slight and may be merely individual.

The following key to *O. steerii* and the allied Philippine species will no doubt be found useful :—

- A. Under surface of inner webs of quills edged with white or pale grey; under wing-coverts and axillaries grey, the former with only the faintest trace of yellow towards the edges of the feathers.
 - a. Tail black; inner webs of the three outer pairs of feathers with a very small yellow spot at the extremity, largest on the outer pair; under tail-coverts olive-yellow edged with pale yellow; tertiaries grey, only the two innermost ones tinged with olive. *O. assimilis*.
 - b. Middle tail-feathers olive, generally with a blackish spot near the extremity; outer pairs black, with a large yellow spot on the terminal part of the inner web, the spots increasing in size towards the outer pairs; under tail-coverts bright yellow; tertiaries and outer margins of the inner secondaries mostly olive. *O. steerii*.
- B. Under surface of inner webs of quills edged with whitish yellow or yellow; under wing-coverts and axillaries pale grey, the former largely mixed with yellow.
 - c. Ear-coverts pure grey; feathers of the throat grey, edged with white, producing a streaked appearance not due to immaturity; subterminal black patch on the outer tail-feathers confined to the terminal half of the feathers. Tail 3·4 inches. . . *O. cinereogenys*.
 - d. Ear-coverts dull olive-yellow; feathers of the throat uniform dark grey in adults (paler and streaked with whitish in young); subterminal black patch on the outer tail-feathers extending nearly to the base of the feathers. Tail 2·85 to 3 inches. *O. basilanicus*.
- C. Under surface of the inner webs of the quills edged with bright yellow; under wing-coverts and axillaries uniform bright yellow *O. samarensis*.

8. *DICRURUS MIRABILIS*, Walden & Layard; Sharpe, Cat. B. Brit. Mus. iii. p. 231 (1877); Steere, List Birds & Mamm. Philippines, p. 15 (1890).

Mr. Whitehead sends a small series of this extremely handsome White-bellied Drongo from the Canloon volcano. We note that some specimens have the under wing-coverts spotted with white; apparently this difference is individual and not due to age. This species has been obtained in the islands of Masbate, Panay, Guimaras, Negros, and Cebu.

9. *ARTAMIDES PANAYENSIS*, Steere, List Birds & Mamm. Philippines, p. 14 (1890).

To Prof. Steere is due the credit of separating and characterizing three of the different species of Cuckoo-Shrikes which inhabit the Philippine Islands. All these as well as the Cebu bird had previously been united with *A. striatus*, which is confined to the island of Luzon. I would take this opportunity of expressing my appreciation of the excellence of Prof. Steere's work, and the sound judgment he has displayed in discriminating the numbers of new species he has described in the pamphlet quoted above. The British Museum having recently acquired his large Philippine collection with all his types, I have had ample opportunity of forming an opinion of his work, and his talents as an ornithologist have called forth my warmest admiration. With much additional material for comparison I find that in almost every instance his species are well founded, and that his concise descriptions include all the more important points of difference.

His characters are, however, extremely short, and in his new species of *Artamides* he has omitted to give any description of the females, although it is to this sex that we have to look for the greatest differences in plumage between the various insular forms; the males being in several instances very similar one to another.

To the six Philippine species already known I have been obliged to add one. The Cebu Cuckoo-Shrike is a very distinct form, though, with all the other species from the

southern islands, it was included by Lord Tweeddale in *A. striatus*. It may be characterized as follows:—

ARTAMIDES CEBUENSIS, sp. n.

Adult male. Very nearly allied to the male of *A. mindorensis*, Steere, from which it only differs in being larger and in having the feathers covering the nostrils grey instead of deep black. The tail is deep black, slightly washed with grey towards the base of the middle feathers.

Total length 12 inches, wing 6·6, tail 5·2, tarsus 1·1.

Adult female. Most nearly allied to the female of *A. striatus*, but the lower back, rump, and upper tail-coverts are *uniform grey* like the back.

Total length 12 inches, wing 6·35, tail 5, tarsus 1·1.

The following key to the seven Philippine species of *Artamides* should facilitate their identification:—

Males.

A. Underparts uniform grey.

a. Lores and space in front of the eyes deep black.

a'. Tail less than 5·5 inches.

a². Feathers covering the nostrils deep black like the lores.

a³. Feathers of the rump grey, fringed with whitish. Tail 4·75 inches..... *A. striatus*.

b³. Feathers of the rump uniform grey. Tail 4·8–4·9 inches *A. mindorensis*.

b². Feathers covering the nostrils grey like the crown. Tail 5·2 inches *A. cebuensis*.

b'. Tail more than 5·5 inches. Feathers covering the nostrils deep black like the lores and space in front of the eyes. Tail 5·65 inches. *A. guillemardi*.

b. Lores and space in front of the eye pale grey like the crown; general colour pale grey *A. sumatrensis*.

B. Throat and breast grey; belly and rest of underparts barred with black and white.

c. Lores and space in front of the eye deep black; under tail-coverts white barred with black, the black bars extending right across the feathers, and being about two-thirds of the width of the white interspaces..... *A. panayensis*.

d. Lores and space in front of the eye grey like the crown; under tail-coverts uniform white, or

white with rather narrow wide-set black bars, which are generally confined to the middle of the feathers *A. mindanensis.*

Females.

- A. Throat and breast uniform grey; belly and underparts barred with black and white.
- a. Lower back, rump, and upper tail-coverts barred with black.
- a'. Feathers of the rump dark grey, barred with black and fringed with whitish; general colour of the upper parts and breast darker grey; black bars on the belly and flank-feathers as wide as, or wider than, the white interspaces, giving these parts a much blacker appearance; under tail-coverts with wide bars of black and white, the former being rather wider *A. striatus.*
- b'. Feathers of the rump white barred with black; general colour of the upper parts and breast paler grey; black bars on the belly and flank-feathers much narrower than the white interspaces, giving these parts a whiter appearance; under tail-coverts white, with one or two narrow wide-set black bars. *A. sumatrensis.*
- b. Lower back, rump, and upper tail-coverts uniform grey like the back *A. cebuensis.*
- B. Entire upper and underparts uniform grey.
- c. Smaller. Tail 4·7, wing 6·2 inches. *A. mindorensis.*
- d. Larger. Tail 5·6, wing 6·7 inches *A. guillemardi*.*
- C. Entire underparts barred with black to the throat; rump and upper tail-coverts barred with black.
- e. Under tail-coverts widely barred with black and white, the black bars being as wide as the white interspaces; patch of feathers covering the nostrils grey like the rest of the crown; general colour of the throat and breast grey barred with black, contrasting with the black and white belly; black bars on the belly and underparts very wide *A. panayensis.*
- f. Under tail-coverts either pure white, or white

* The only female of *A. guillemardi* in the British Museum collection is not quite adult.

with some black bars; patch of feathers covering the nostrils whitish; general colour of the throat and breast white, barred with black like the rest of the underparts; black bars on the belly and underparts narrower *A. mindanensis*.

The female of *A. striatus* is remarkably similar to the male of *A. panayensis*, but the former may be easily distinguished by the much smaller bill as well as by the absence of the deep black colour on the lores and feathers covering the nostrils.

I append a list of the Philippine species, showing the islands in which they have been found up to the present time:—

- | | | |
|----|----------------------------|---|
| 1. | <i>Artamides striatus.</i> | Luzon. |
| 2. | „ <i>mindorensis.</i> | Mindoro and Tablas. |
| 3. | „ <i>cebuensis.</i> | Cebu. |
| 4. | „ <i>guillemardi.</i> | Lapac and Tawi Tawi, Sulu Archipelago. |
| 5. | „ <i>sumatrensis.</i> | Malacca, Sumatra, Borneo, Balabac, Palawan, and Calamianes. |
| 6. | „ <i>panayensis.</i> | Masbate, Panay, Guimaras, and Negros. |
| 7. | „ <i>mindanensis.</i> | Samar, Panaon, Nipah, Mindanao, and Basilan. |

10. *EDOLISOMA PANAYENSE*, Steere, List Birds & Mamm. Philippines, p. 14 (1890).

Some beautiful examples, including both sexes, of this Black Cuckoo-Shrike were collected on the volcano of Canloon. This species is very easily distinguished from every other Philippine form at present known, and both males and females may be at once recognized by having a pure white band down the wing, while the vent and under tail-coverts, as well as the tips of the tail-feathers, are similarly coloured.

Although this species is now recorded for the first time from Negros, an adult female was obtained by Mr. A. H. Everett twenty years ago from that island; but Lord Tweeddale regarded this specimen as an immature example of

E. carulescens, though the white vent and under tail-coverts, as well as the white tips to the tail-feathers, would seem to make such an identification almost impossible.

I add the following key to the five Philippine species of *Edoliisoma* :—

- A. Vent and under tail-coverts and tips of tail-feathers black or grey; no white band down wing.
 - a. Plumage entirely black.
 - a'. Back glossed with inky bluish. *E. carulescens*, ♂.
 - b'. Back slightly glossed with greenish *E. alterum*, ♂.
 - b. Plumage blackish grey.
 - c'. Dark grey of upper parts slightly glossed with purplish; under surface of inner webs of quills uniform grey. *E. carulescens*, ♀.
 - d'. Dark grey of upper parts slightly glossed with greenish; under surface of inner webs of quills margined with whitish. *E. alterum*, ♀.
 - c. General colour of plumage light grey.
 - e'. Band across forehead, lores, sides of face, and throat black.
 - a². Rump and upper tail-coverts whitish grey, much paler than the back. *E. mindanense*, ♂.
 - b². Rump and upper tail-coverts grey, uniform in colour with the back *E. everetti*, ♂.
 - f'. Entire head and throat grey like the rest of the upper parts.
 - c². Rump and upper tail-coverts whitish grey, much paler than the back. *E. mindanense*, ♀.
 - d². Rump and upper tail-coverts grey, uniform in colour with the back *E. everetti*, ♀.
- B. Vent and under tail-coverts, tips of tail-feathers, and band down wings pure white.
 - d. Front of forehead, lores, cheeks, throat, and breast black, slightly glossed with greenish. *E. panayense*, ♂.
 - e. Entire head, throat, and breast grey like the back and belly. *E. panayense*, ♀.

Dr. Sharpe compares his *E. everetti* with *E. morio* from Celebes, but although the males are much alike, the females belong to somewhat different sections of the genus, the female of the latter species having the underparts strongly barred with buff and black. *E. everetti* should no doubt

have been compared with *E. mindanense*, from which species it only differs in having the rump and upper tail-coverts darker grey like the back.

The following list shows the localities where each of the five Philippine species have been obtained :—

<i>Edoliisoma caerulescens.</i>	Luzon.
„ <i>alterum.</i>	Cebu.
„ <i>mindanense.</i>	Mindanao and Basilan.
„ <i>everetti.</i>	Sulu, Tawi Tawi, and Bongao.
„ <i>panayense.</i>	Panay, Guimaras, and Negros.

11. *PERICROCOTUS NOVUS*, Wardlaw-Ramsay ; Grant, Ibis, 1895, p. 252.

There is a single adult male example, very closely allied to, if not identical with, the Luzon Minivet ; like the latter, it differs from the Leyte bird (*P. leytensis*, Steere) in having the underparts paler and of a beautiful orange-yellow. In the Negros bird the tail is unfortunately imperfect, many of the feathers being lost, and, so far as I can see, the only tangible difference between Luzon and Negros examples is that in the latter only three of the inner secondary quills are ornamented on the outer webs with orange-red subterminal drops. This character is, however, liable to considerable variation, as may be seen from the two male examples collected by Mr. Whitehead in Luzon. In one of these birds six of the secondaries are thus ornamented, but in the second specimen there are only four feathers with subterminal orange-red drops, and the outermost of these are quite rudimentary. It will thus be seen that this character varies, and is not therefore reliable, and under these circumstances I think it would be premature to separate the Negros bird from that found in Luzon.

Total length (tail imperfect) 5·6 inches, wing 3·1, tarsus 0·55.

12. *LALAGE TERAT* (Bodd.) ; Grant, Ibis, 1895, p. 441.

The Pied Cuckoo-Shrike is represented in the present collection by an adult female ; this species appears to be universally distributed throughout the group.

13. *MUSCICAPA GRISEICTICTA* (Swinh.) ; Grant, Ibis, 1895, pp. 252, 441.

We have an adult male of the Striped Flycatcher, which has the throat whiter than usual, though I do not think any importance is to be attached to this.

14. *MUSCICAPULA LUZONIENSIS*, Grant, Ibis, 1894, p. 505, 1896, p. 463.

Examples of the Luzon Red-breasted Flycatcher were met with high up on the volcano of Canloon, and they in no wise differ from Luzon and Mindoro examples.

15. *MUSCICAPULA WESTERMANNI*, Sharpe ; Grant, Ibis, 1895, p. 442.

Another highland form from the Canloon volcano was the Mountain Pied Flycatcher. This little bird has a wide range, having been recently obtained in the highlands of Southern Celebes. The upper parts of females from Negros are of a rather darker grey than in Luzon specimens.

16. *HYPOTHYMIS AZUREA* (Bodd.) ; Grant, Ibis, 1896, pp. 111, 464.

Mr. Whitehead sends a perfect pair of the Black-naped Flycatcher, and the female differs slightly from others obtained in the Philippine Islands, having the mantle and back brownish grey *slightly washed with blue*. In all other females examined, including an example from Negros, these parts are dull brown.

17. *RHIPIDURA ALBIVENTRIS* (Sharpe) ; Sharpe, Cat. Birds Brit. Mus. iv. p. 324 (1879).

Philentoma albiventris, Steere, List Birds & Mamm. Philippines, p. 15 (1890).

Several examples of the White-bellied Fantail-Flycatcher were obtained on the Canloon volcano.

18. *ZEOCEPHUS RUFUS* (G. R. Gray) ; Grant, Ibis, 1896, pp. 112, 464.

A male of this bright chestnut Flycatcher is quite similar to examples previously sent by Mr. Whitehead from Luzon. The wattle round the eye is well developed, but the middle

pair of tail-feathers are only about 0.6 inch longer than the second pair.

19. *RHINOMYIAS ALBIGULARIS*, Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 27 (1894).

One of the most interesting birds sent from Negros is this White-throated Flycatcher, very nearly allied to *R. pectoralis*, which inhabits the south of the Malay Peninsula, Sumatra, and Borneo. The present species may of course be distinguished by its considerably larger size and the absence of the white patch in front of the eye, as well as by the more olivaceous brown cheeks and chest-band, which are not so strongly contrasted with the white of the throat. But these differences are really slight, and it seems very curious that the Negros and Guimaras birds should so closely resemble *R. pectoralis* from Borneo, while we find two distinct but closely allied species, *R. ruficauda* and *R. ocularis*, occurring in the intermediate islands. In Prof. Steere's collection we have received the types of *R. samarensis* as well as two specimens collected at Ayala, Mindanao, which he considers to represent an undescribed species. They apparently differ from his *R. samarensis* only in having the culmen reddish brown instead of blackish brown; but this difference is due to immaturity, as is further proved by the subterminal buff spots on the innermost secondaries, which are undoubtedly remains of the first plumage. Again, Prof. Steere distinguishes his *R. samarensis* from *R. ruficauda*, Sharpe, of which we have several examples. He says that the former differs "in having the cheeks brown, not olive, and in having the under surface washed with fulvous-brown, this forming a wide band across the chest." In comparing the type of *R. samarensis* with typical examples of *R. ruficauda* from Basilan, we fail to find any difference in the colour of the cheeks, and the somewhat indistinct band across the chest, which can hardly be described as "broad," is equally well-developed in a male from Basilan. There can be no doubt that the birds from Samar (*R. samarensis*, Steere), Mindanao, and Basilan (*R. ruficauda*, Sharpe) belong to one species and must stand as *R. ruficauda*, Sharpe.

Key to the Species of the Genus Rhinomyias.

- A. Without any distinct eyebrow-stripe.
- a. Underparts white, with a wide strongly marked pectoral band, dividing the throat from the breast and belly.
 - a'. Larger; wing 3·45 inches: no white patch in front of the eye; cheeks and pectoral band brownish olive. *R. albigularis.*
 - b'. Smaller; wing 3 inches: a white patch in front of the eye; cheeks and pectoral band darker olive-brown *R. pectoralis.*
 - b. Underparts whitish, with no pectoral band, or with mere traces of one.
 - c'. No ring of chestnut feathers round the eye.
 - a². A grey patch in front of the eye. *R. ruficauda.*
 - b². No grey patch in front of the eye, the feathers being olive like the crown *R. ruficrissa.*
 - d'. A ring of chestnut feathers round the eye. *R. ocularis.*
- B. With a distinct eyebrow-stripe.
- c. Eyebrow-stripe greyish olive; crown reddish brown; cheeks and feathers round the eye dull chestnut-brown; pectoral band and flanks greyish olive *R. gularis.*
 - d. Eyebrow-stripe pure white; crown olive; lores and fore part of cheeks blackish; pectoral band olive washed with rufous, shading into clear rust-red on the sides and flanks *R. insignis.*

The following list shows the range of all the species :—

<i>Rhinomyias albigularis.</i>	Guimaras and Negros.
„ <i>pectoralis.</i>	South of the Malay Peninsula, Sumatra, and Borneo.
„ <i>ruficauda.</i>	Samar, Mindanao, and Basilan.
„ <i>ruficrissa.</i>	Borneo.
„ <i>ocularis.</i>	Sulu and Tawi Tawi.
„ <i>gularis.</i>	Mt. Kina Balu, North Borneo.
„ <i>insignis.</i>	Luzon.

20. *CULICICAPA HELIANTHEA* (Wallace) ; Sharpe, Cat. B. Brit. Mus. iv. p. 370 (1879).

Muscicapa helianthea, Wallace, P. Z. S. 1865, p. 476.

Xantholestes panayensis, Sharpe, Trans. Linn. Soc. new series, i. p. 327 (1877).

Culicicapa panayensis, Sharpe, Cat. B. Brit. Mus. iv.

p. 371 (1879); Steere, List Birds & Mamm. Philippines, p. 16 (1890); Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 41 (1894); Grant, Ibis, 1894, p. 506, & 1895, p. 443.

That this little yellow Philippine Flycatcher should prove to be identical with *C. helianthea* from Celebes is another instance of the affinity between the highland forms met with in these two localities. There can be no doubt about the correctness of this identification, for among our Celebean examples is Dr. Wallace's type of *C. helianthea*, and we have a large series of Philippine specimens. Dr. Sharpe quite agrees as to the propriety of uniting these two forms.

21. *CRYPTOLOPHA NIGRORUM* (Moseley); Grant, Ibis, 1895, p. 443, 1896, p. 464.

A pair of the little yellow Flycatcher-Warbler agree perfectly with Moseley's type, which was obtained at Danao in Southern Negros.

22. *CRYPTOLOPHA OLIVACEA* (Moseley); Grant, Ibis, 1896, p. 112.

The Olive Flycatcher-Warbler was met with on the volcano of Canloon. The differences between young and old birds are worth noting. In the adults the feathers of the crown of the head are dark grey, edged on the sides with dull olive-green; the chin and throat white, with faint indications of yellowish streaks; and the outer webs of the outer primaries are hoary. Young birds have the crown olive-green like the rest of the upper parts, the chin and throat pale yellow, and the outer webs of the outer primaries olive-green like the rest of the quills.

The differences which Mr. Moseley gives as characteristic of the female are really due to immaturity. Mr. Whitehead sends two specimens, one a young male, which is precisely similar in plumage to the female type obtained at Lake Danao, Southern Negros; the second, a more mature bird of which the sex is not recorded, has the crown of the head and edges of the primary quills as in the adult, but the chin and throat pale yellow.

23. *STOPAROLA PANAYENSIS* (Sharpe) ; Sharpe, Cat. B. Brit. Mus. iv. p. 440 (1879).

Eumyias panayensis, Steere, List Birds & Mamm. Philip-pines, p. 16 (1890).

The Panay Verditer Flycatcher has already been recorded from Negros by Steere, and though he does not mention Panay in his list of localities, the type specimen came from that island. *S. meridionalis*, Büttikofer (*cf.* Notes Leyden Museum, xv. p. 170, 1893), is very closely allied to the present species, but may be distinguished by the blue on the wings and tail being somewhat brighter. The National Collection has recently acquired a pair of *S. meridionalis* from Bonthain Peak, Southern Celebes ; the wing in the male measures 8 cm. (=3·1 inches), that of the female 7·7 cm. (=3·05 inches). It seems difficult to believe that two forms so closely allied as *S. septentrionalis* and *S. meridionalis* can be found in the same island, and I gather from Dr. Büttikofer's descriptions that the difference is purely one of size. I have not seen specimens of the typical *S. septentrionalis* from Northern Celebes, but cannot help suspecting the specific identity of northern and southern birds.

24. *PHYLLOSCOPUS BOREALIS* (Blasius) ; Grant, Ibis, 1896, p. 113.

A specimen of the Arctic Willow-Warbler was shot in March.

25. *TURDUS NIGRORUM*, sp. n.

This is the third new species of the genus *Turdus* discovered by Mr. Whitehead in the Philippine Islands. So far he has collected only in the high altitudes of three out of the four islands visited, but on each of these three islands a new Blackbird was met with when an altitude of between 5000 and 6000 feet was reached.

The present species, though a dull-coloured and by no means showy bird, is extremely distinct from anything hitherto described ; it appears to be most nearly allied to *Turdus simillimus*, Jerd., from the Nilghiris, but the sexes

are similar in plumage and the general colour of the upper parts is rich dark umber.

Adult male and female. Above rich dark umber, darkest on the top of the head; wings and tail brownish black; chin, throat, and chest pale sooty brown, rather lighter on the breast, flanks, and belly; a band of white feathers across the vent; under tail-coverts dark brown, with pale whitish-brown tips. Bill and feet yellow.

Male. Total length 9·5 inches, wing 4·9, tail 3·8, tarsus 1·35.

Female. Total length 8·8 inches, wing 4·7, tail 3·6, tarsus 1·25

An *immature male* has the upper parts much like those of the adult, but the feathers of the back have indistinct margins of darker colour, the chin and middle of the throat are buff, and the breast and underparts spotted with black and washed with rufous, shading into tawny buff on the middle of the belly.

The Negros Blackbird is resident on the volcano of Canloon at an altitude of from 5000 to 6000 feet, and both young birds and eggs were obtained.

I may here mention that while examining *T. similimus* from the Nilghiris, which is the nearest known ally to the present species, I chanced to examine the *Merula erythrætis*, Davison, the type of which was obtained at Cannanore. It is merely a slightly immature male of *T. similimus*, which has had the lores, eyebrow-stripes, cheeks, and sides of the throat artificially coloured with some dull chestnut pigment, easily removable when moistened.

26. TURDUS OBSCURUS, Gmel.

Merula obscura, Grant, Ibis, 1895, p. 445.

A male and female of the Dark Ouzel were shot respectively on the 9th and 11th of April.

27. MONTICOLA SOLITARIUS (P. L. S. Müller); Grant, Ibis, 1894, p. 509.

An adult pair of the Eastern Blue Rock-Thrush are dated the 26th of March.

28. *Iole guimarasensis*, Steere, List Birds & Mamm. Philippines, p. 19 (1890).

Mr. Whitehead sends one example of the Guimaras Streaked Bulbul, which Prof. Steere separated under the above name.

I must say I find the Bulbuls allied to typical *I. philippensis* extremely puzzling, and it is very difficult to know in what way it is best to treat them. Prof. Steere regards the birds from Luzon, Marinduque, Samar, Leyte, Bohol, and Cebu as *I. philippensis*, while he separates those inhabiting the islands of Panay, Guimaras, and Negros under the name of *I. guimarasensis*. Messrs. Bourns and Worcester [*cf.* Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 60 (1894)] are of opinion that Prof. Steere is in error, and reunite the birds from all these islands under the name of *I. philippensis*. On the whole, however, I am in favour of following Prof. Steere, for I find certain constant differences which appear sufficiently important to justify the separation of *I. guimarasensis* at least as a subspecies. The much larger bill of this bird and the paler colour of the throat are differences easily appreciated, and, moreover, we are told that the notes of the two forms in question are very different.

	Culmen.	
	in.	in.
<i>I. philippensis</i>	0.95	to 0.98*
<i>I. guimarasensis</i>	1.1	to 1.15

In the British Museum there are typical specimens of *I. philippensis* obtained on the island of Panaon, to the south of Leyte, and at Butuan, in the north of Mindanao. In the south of this island and in Basilan *I. philippensis* is represented by the much larger *I. ruficularis*, Sharpe, which is without the pale shaft-stripes on the throat.

Prof. Steere gives Luzon and Mindanao as the habitat of *I. ruficularis*; the former locality is apparently given in

* Five Cebu birds have the bill slightly larger (0.98 inch) than typical *I. philippensis* from Luzon and the other islands, and in this respect somewhat approach *I. guimarasensis*; but they have the throat more brightly coloured, and, as will be seen, the difference in the length of the bill is but slight.

mistake for Basilan, as the species has never been obtained in Luzon.

29. *BRACHYPTERYX BRUNNEICEPS*, sp. n.

The Negros Shortwing is closely allied to *B. polio-gyna*, which Mr. Whitehead discovered in the highlands of Lepanto, Luzon. The *males*, in fact, are, as one would expect, very much alike, but the Negros bird has the top of the head and throat washed with black instead of dark slate. Between the females the differences are much more marked: the crown of the head in *B. brunneiceps* is much darker brown, much less strongly washed with sienna on the forehead; the chin and middle of the throat are much deeper in colour, very little paler than the sides; and the general tone of the underparts is darker slate-blue, the belly being in no way paler than the breast.

Adult male. Total length 5 inches, wing 2.65, tail 1.9, tarsus 1.15.

Adult female. Total length 5.2 inches, wing 2.65, tail 1.9, tarsus 1.15.

I may here call attention to a slight error which has crept into the description of the female of *B. polio-gyna* (*cf.* Grant, Ibis, 1895, p. 446). The length of the wing, given as 25 inches, should, of course, read 2.5 inches.

30. *COPSYCHUS MINDANENSIS* (Gmel.); Grant, Ibis, 1895, p. 448.

Mr. Whitehead sends a pair of the Philippine Magpie-Robin.

31. *CITTOCINCLA NIGRORUM*, sp. n.

The Negros Shama is nearly allied to *C. luzoniensis* from Luzon and Marinduque, but in the male the white patch on the secondary coverts is absent; the lower back, rump, and upper tail-coverts are mostly black instead of chestnut; the tail-feathers are uniform black, with the exception of the outer pair, which have a small white spot at the tip; and the flanks are pale brownish buff.

From the Masbate bird *C. superciliaris* [*cf.* Bourns &

Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 23 (1891)] the male of this new species appears to differ in having the eyebrow-stripes no wider than in *C. luzoniensis*; a partially concealed patch of white feathers in the middle of the lower back; the lateral upper tail-coverts white, only the median ones black; the bend of the wing black, and, as mentioned above, the outer tail-feathers black, with only the smallest white spot at the extremity, while the flank-feathers are washed with brownish buff.

I have not seen an example of *C. superciliaris*, but, from what Messrs. Bourns and Worcester say in their description, the width of the superciliary stripes should alone be sufficient to distinguish it from *C. nigrorum*; and if the length of the tarsus (0·86 inch) is correct, the leg of the Masbate bird must be very much shorter.

Adult male. Head, upper parts, and chest shining black; wide eyebrow-stripes (commencing in front of the eye and extending down the sides of the neck), partially-concealed patch of feathers on the middle of the lower back, lateral upper tail-coverts, rest of underparts, and a spot at the tip of the outer tail-feathers white; flanks washed with brownish buff.

Total length 6·5 inches, culmen 0·72, wing 3·25, tail 2·9, tarsus 1·1.

Adult female. Differs from the male in having the upper parts deep brownish black; the white eyebrow-stripes nearly confluent on the forehead; the outer webs of the primaries edged with reddish brown; the chin and throat white, divided by a blackish band from the rest of the underparts; and the upper breast, as well as the flanks, washed with tawny buff.

Total length 5·8 inches, culmen 0·72, wing 2·95, tail 2·5, tarsus 1·1.

32. *MEGALURUS RUFICEPS* (Tweedd.); Grant, Ibis, 1895, p. 448; 1896, p. 467.

A male of the Rufous-headed Marsh-Warbler was obtained on the 28th of March.

33. *ORTHOTOMUS CASTANEICEPS*, Walden ; Sharpe, Cat. B. Brit. Mus. vii. p. 223 (1883) ; Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 59 (1894).

Orthotomus panayensis, Steere, List Birds & Mamm. Philippines, p. 20 (1890).

There can be no doubt that Messrs. Bourns and Worcester were fully justified in uniting *O. panayensis*, Steere, to the chestnut-headed Tailor-bird from Guimaras and Negros. There is a fairly large series of these birds in the British Museum collection, and in addition to these Mr. Whitehead has sent seven specimens in the present collection. The amount of green varies much in different individuals ; in some examples the whole mantle and upper back are grey, shading into olive-green on the lower back and rump, while in one specimen the olive-green extends over the upper back almost to the nape. This specimen somewhat approaches the green-backed Tailor-bird (*O. chloronotus*, Grant) previously described from Cape Engaño, North Luzon, but the latter may be at once distinguished by the chestnut tail.

34. *PARUS ELEGANS*, Less. ; Grant, Ibis, 1895, p. 449, 1896, p. 467.

The Philippine Tit was again met with and a pair obtained.

35. *HYLOTERPE WINCHELLI*, Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 21 (1894).

The present collection contains examples of the Panayan Thick-head, which agree perfectly with Messrs. Bourns and Worcester's description. Mr. Whitehead was under the impression that a specimen obtained by him at the foot of the Canloon volcano differed specifically from three examples collected at a much higher altitude. The differences, however, are due to age, the bird from the low ground being an immature male, as is clearly shown by the wide pale rufous margins to some of the wing-coverts. It also has the upper parts of a more olive-brown tint than the adult, and the tail is of a distinctly greyer hue.

36. *LANIUS LUCIONENSIS*, Linn. ; Grant, Ibis, 1896, p. 119.

A male of the Luzon Shrike was shot on the Canloon volcano on 30rd April.

37. *RHABDORNIS MYSTACALIS* (Temm.) ; Grant, Ibis, 1896, p. 119.

Mr. Whitehead makes the following remarks about the nesting-habits of the Bridled Flower-creeper :—"One of my collectors shot a *Rhabdornis*, which he said was building a nest in an old rotten branch of a tree. I was, of course, sorry to hear the bird had been shot, or I might have been able myself to testify to its nesting-habits ; but I have no doubt as to the man's veracity, and his companion pointed out the branch to me a few days afterwards. Natives, of course, are by no means truthful, but as the man knew nothing of the value of his observations, and had nothing to gain or lose, we will assume that Dr. Gadow is quite correct and that *Rhabdornis* is a Creeper, though I must say its habits are remarkably like those of an *Arachnothera*."

Birds from Leyte, Dinagat, and Mindanao appear to differ somewhat from typical specimens of *R. mystacalis* from Luzon and Negros. Dr. Gadow has already noted that the bill in the Dinagat bird is much shorter than in specimens from Manila ; but another important difference appears to be that the *male* of the smaller Leyte, Dinagat, and Mindanao bird has the general colour of the upper parts reddish brown, like those of the female ; whereas the male in Luzon and Negros birds, of which we have examined many, always has the upper parts much darker greyish brown, devoid of any rufous tinge.

Possibly it may eventually be found necessary to separate the smaller southern form under some distinctive name, but before doing this it is necessary to examine specimens from other islands.

38. *DENDROPHILA AENOCHLAMYS*, Sharpe, Trans. Linn. Soc. 2nd ser. Zool. i. p. 338, pl. liii. fig. 3 (1876).

Sitta aenochlamys (Sharpe) ; Gadow, Cat. B. Brit. Mus. viii. p. 359 (1883).

We have received from Mr. Whitehead a small series of the Guimaras Nuthatch, which is now recorded for the first time from Negros. The birds agree perfectly with the original description taken from the type obtained by Prof. Steere in Guimaras. The figure, however, given in the 'Transactions' of the Linnean Society is not quite correct, for the white band across the lores, although an important specific character, is entirely omitted, and the tail, which is depicted as being entirely black, with a white subterminal spot on the inner webs of the outer pairs of feathers, is, in reality, widely tipped with greyish blue, and the white spots, which are only developed on the two outermost pairs of feathers, are inconspicuous. This species is now known to occur in the islands of Samar, Panay, Guimaras, Negros, Cebu, and Basilan.

39. *ÆTHOPYGA MAGNIFICA*, Sharpe; Gadow, Cat. B. Brit. Mus. ix. p. 24 (1884).

This magnificent Sunbird, one of the most splendid species of a brilliant genus, appears to be fairly common about the Canloon volcano. Mr. Whitehead found two of its nests, one of which, together with a pair of birds, he has most kindly presented to the British Museum, where it will shortly be on exhibition. He writes:—"The nest was dangling from the orchid to which it still adheres, and was situated close to the stem of a huge tree, at about 3 feet from the ground. The nest was well sheltered, so as to look like a piece of forest rubbish."

40. *CINNYRIS JUGULARIS*, Linn.; Grant, Ibis, 1895, p. 451, 1896, p. 468.

The Philippine Yellow-breasted Sunbird appears to be universally distributed throughout the islands. There is a fine male in the present collection, shot in the neighbourhood of the volcano of Canloon.

41. *ZOSTEROPS SIQUIJORENSIS*, Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 21 (1894).

The Siquijor Silvereye was obtained near the summit of the volcano of Canloon. It was the only common bird met

with at this high altitude, being found as far as the fumes and eruptions from the volcano permit vegetation to approach its summit.

The Negros birds agree perfectly with the description given by Messrs. Bourns and Worcester, but the wing-measurement is slightly longer.

	Wing. in.
Two males	2.35
One female	2.27
Four males	2.25
One not sexed	2.23
Two males	2.22
One male	2.21

The wing-measurement of the Siquijor birds is given as 2.16 inches. It may be worth while to call attention to two obvious misprints in Messrs. Bourns and Worcester's paper, viz.: in the measurements given of the male type from Siquijor we find "Culmen 1.55, tarsus 1.57." This should, of course, read—Culmen 0.55, tarsus 0.57.

The tarsus in this species is unusually large and strong, and proportionately very much larger than in the allied *Z. meyeri*.

I will take this opportunity of making some remarks on the closely allied *Z. basilanica*, Steere. In spite of what Messrs. Bourns and Worcester have written [*cf.* Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 57 (1894)], Dr. Steere was, in my opinion, perfectly justified in separating the southern birds from *Z. everetti*, which inhabits Cebu. They appear to have missed the great point of difference between the two species, for the black patch under the eye, combined with the bright yellow lores, serves at once to distinguish the Cebu bird from *Z. basilanica*. The male type of *Z. everetti* was shot in Cebu in the month of April, and we have compared this bird with an adult male collected in Leyte at the same date. In these two birds the specific differences are strongly marked and are evidently in no way seasonal. We find all our Samar specimens are typical *Z. basilanica* and differ constantly from Cebu birds. Although Lord Tweed-

dale, who was the first to describe *Z. everetti* from Cebu, subsequently identified Mindanao birds with this species, he was, no doubt, in error; the British Museum possesses a good series of *Z. basilanica*, including examples from the islands of Samar, Leyte, Dinagat, North and South Mindanao, Basilan, and Bongao in the Sulu Archipelago. The Bongao bird has been identified by Dr. Sharpe as *Z. everetti*, but appears to be typical *Z. basilanica*.

42. *ZOSTEROPS NIGRORUM*, Tweedd.; Sharpe, Cat. B. Brit. Mus. ix. p. 186 (1884).

Mr. Whitehead also sends a good series of the Negros Silvereye, which was met with on the lower slopes of Canloon. It is very like *Z. luzonica*, Grant, from Luzon, but at once distinguished by the black band under the fore part of the eye. Some of the specimens in the present collection have the throat and middle of the underparts brighter yellow than in the types, which were obtained by Mr. A. H. Everett at Valencia, Negros.

43. *DICÆUM HÆMATOSTICTUM*, Sharpe, Cat. B. Brit. Mus. x. p. 35 (1885); Steere, List Birds & Mamm. Philippines, p. 21 (1890).

Mr. Whitehead found the nest of this beautiful Blood-breasted Flowerpecker and has presented it, together with a pair of birds, to the British Museum. The nest, which is suspended from the end of a branch, will shortly be exhibited in the Bird Gallery, the birds having been beautifully mounted by Mr. J. Cullingford, of Durham.

44. *DICÆUM DORSALE*, Sharpe, Cat. B. Brit. Mus. x. p. 40 (1885).

This handsome Orange-breasted Flowerpecker appears to be fairly common in the neighbourhood of the Canloon volcano.

45. *PRIONOCHILUS INEXPECTATUS*, Hartert; Grant, Ibis, 1896, p. 469.

It seems curious that this species, but recently described from specimens collected by Mr. A. H. Everett in Luzon and

Mindoro, should now turn up in Negros. We have three males from the vicinity of Canloon which agree perfectly with a typical example of the Grey-breasted Thick-billed Flowerpecker from Laguna de Bai, Luzon; but the male sent in the previous collection from Mindoro appears to differ slightly in the colour of the upper parts, the back, as well as the top of the head, being black slightly glossed with purple, whereas in the Negros and Luzon birds the back has a distinctly greenish gloss. We have only this one male specimen from Mindoro for comparison, but it seems probable that the slight difference mentioned is individual or seasonal.

46. *ANTHUS GUSTAVI*, Swinhoe; Sharpe, Cat. B. Brit. Mus. x. p. 613 (1885).

Gustave's Pipit is a winter visitor to the Philippines, and has been met with in most of the islands, but it is now recorded from Negros for the first time.

47. *ARTAMUS LEUCOGASTER* (Wagl.); Grant, Ibis, 1895, p. 258.

We have a female of the White-bellied Wood-Swallow.

48. *SARCOPS CALVUS* (Linn.); Grant, Ibis, 1896, p. 469.

As already mentioned in my previous paper on the Mindoro collection, the Bald-headed Grackle is represented in the present collection by the black-backed form.

49. *MUNIA JAGORI*, Cabanis; Sharpe, Cat. B. Brit. Mus. xiii. p. 337 (1890).

Munia brunneiceps, Walden; Sharpe, Cat. B. Brit. Mus. xiii. p. 338 (1890); Grant, Ibis, 1895, p. 261.

The present collection contains three fine black-headed examples of this little Chestnut Weaver. Having gone carefully through all the material in the National Collection, I have no hesitation in saying that *M. brunneiceps* is merely the worn autumn plumage of *M. jagori*. In the series examined from the Philippines we find that the brown head begins to make its appearance in July specimens, and is strongly marked in birds shot in September and October. The birds obtained at Albay and Catanduanes in September

(*cf.* Ibis, 1895, p. 261), and identified as *M. brunneiceps*, Walden, are merely worn specimens of *M. jagori*.

Munia formosana, Swinhoe, of which a specimen was recorded from Isabella, North Luzon (*cf.* Ibis, 1895, p. 112), appears to be a distinct pale-coloured form, the head, even in freshly-moulted male examples, being of a dark smoky brown. In addition to the specimens recorded in the Catalogue of Birds, I have examined a number of Formosan examples of this species in the Seebohm collection.

50. *UROLONCHA EVERETTI* (Tweedl.) ; Grant, Ibis, 1895, p. 261.

Both sexes of Everett's Striped Weaver are represented in the present collection. Although it has been found in most of the Philippine islands, this is the first record of its occurrence in Negros.

51. *PITTA ERYTHROGASTRA*, Temm. ; Grant, Ibis, 1896, pp. 121, 470.

This is the first time the Red-bellied Pitta has been found in Negros, although it has been met with in other islands of the group.

52. *PITTA ATRICAPILLA*, Less. ; Grant, Ibis, 1896, p. 121.
The Philippine Black-headed Pitta is also represented.

53. *COLLOCALIA FUCIPHAGA* (Thunb.) ; Grant, Ibis, 1895, p. 461.

An adult male of the Edible-nest Swiftlet, shot on the volcano of Canloón, agrees perfectly with the birds obtained in the highlands of Lepanto. The wing measures 4.45 inches.

54. *MACROPTERYX COMATA*, Temm. ; Grant, Ibis, 1895, p. 459.

We have a male of the Tufted Tree-Swift, shot on the 21st of March.

55. *EURYSTOMUS ORIENTALIS* (Linn.) ; Grant, Ibis, 1896, p. 122.

A male of the Broad-billed Roller.

56. *ALCYON NIGRIROSTRIS*.

Ceyx nigrirostris, Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 13 (1894).

We have an adult female of this beautiful little Black-billed Blue-belted Kingfisher, which, as Messrs. Bourns and Worcester have pointed out in their description, is most nearly allied to *A. cyanipectus*, but may be readily recognized by the entirely black bill and deep orange-buff breast and belly.

57. *HALCYON GULARIS*, Kuhl.; Grant, Ibis, 1895, p. 465.

The White-throated Kingfisher is represented by a fine adult male.

58. *HALCYON WINCHELLI*, Sharpe, Cat. B. Brit. Mus. xvii. p. 255 (1892).

Halcyon alfredi, Oustalet, Le Nat. 1890, p. 62.

A male of the beautiful Winchell's Kingfisher, shot in the month of March, is in worn plumage, and the cheeks and sides of the face are black, almost entirely devoid of the purplish blue which is characteristic of birds from Southern Mindanao, Basilan, and Tawi Tawi. As Prof. Steere observes, the sexes differ one from another, and the male, which has the underparts pure white, has been described as a distinct species by Dr. Oustalet under the name of *H. alfredi*.

The figure of the female type [*cf.* Trans. Linn. Soc. (2) i. p. 318, pl. 47 (1876)] is somewhat misleading. The strongly-marked cobalt band encircling the crown, with which it is in strong contrast, is very inaccurately represented; the collar round the back of the neck is chestnut, like the spot in front of the eye, not buff; while the white belly is not indicated.

59. *HALCYON CHLORIS* (Bodd.); Grant, Ibis, 1895, p. 261.

Sauropatis chloris, Blanford, Faun. Brit. Ind., Birds, iii. p. 135 (1895).

Mr. Whitehead sends a male and two females of the White-collared Kingfisher; the male has green ear-coverts and scarcely any trace of a black band bordering the crown, and agrees perfectly with the subspecies *H. armstrongi*, Sharpe. One female has the ear-coverts black, largely mixed with

green, and but slight trace of a black band; while in the other female specimen the back ear-coverts are united by a black band, forming a wide border to the crown.

60. *HALCYON MOSELEYI* (Steere); Sharpe, Cat. B. Brit. Mus. xvii. p. 228 (1892).

Actenoides moseleyi, Steere, List Birds & Mamm. Philippines, p. 11 (1890).

Moseley's Kingfisher, a truly splendid species, is represented by three fully adult males. The only example previously known is the immature female originally described by Prof. Steere. From this female type the male birds before me appear to differ in the following points:—The lower ear-coverts are chestnut instead of buff, the moustachial stripes cobalt-blue, like the band round the crown of the head, and there is a small triangular green patch in the middle of the black interseapular region. From the adult male of *H. lindsayi* they are easily distinguished by the generally black ground-colour of the mantle and scapulars, as well as by the black margins to the feathers of the breast and flanks, only those in the middle of the breast being tinged with greenish. Total length 10 inches, wing 4·22, tail 3·15, tarsus 0·7.

61. *PENELOPIDES PANINI* (Bodd.); Grant, Cat. B. Brit. Mus. xvii. p. 372 (1892).

We have both sexes of the Panayan Hornbill shot in the month of March on the volcano of Canloon.

62. *CRANORRHINUS WALDENI*, Sharpe; Grant, Cat. B. Brit. Mus. xvii. p. 380 (1892); Eagle Clarke, Ibis, 1894, p. 533.

Walden's Hornbill, recently recorded by Mr. Clarke from the island of Negros, has been previously met with in Panay and Guimaras.

63. *LYNGIPICUS MACULATUS* (Scop.); Hargitt, Cat. B. Brit. Mus. xviii. p. 332 (1890) [part Panay & Guimaras]; Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. i. pp. 51–52 (1894); Grant, Ibis, 1895, p. 115, 1896, p. 471.

A male and several females of the Panayan Pigmy Woodpecker are here recorded for the first time from the island of

Negros. All I have at present to say on these birds has already been published in my previous paper on the birds of Mindoro (see p. 472)

64. *CHRYSOCOLAPTES XANTHOCEPHALUS*, Walden & Layard; Hargitt, Cat. B. Brit. Mus. xviii. p. 457 (1890); Steere, List Birds & Mamm. Philippines, p. 8 (1890); Eagle Clarke, Ibis, 1894, p. 534.

The Negros Crimson-backed Woodpecker is represented by a fine series, and both old and young were collected. The latter differ from the adults in having the eyebrow-stripes, cheeks, and ear-coverts pale yellowish buff instead of golden yellow, and the lower breast and belly dirty yellowish buff; otherwise the plumage is the same.

65. *THRIPONAX HARGITTI*, Sharpe; Hargitt, Cat. B. Brit. Mus. xviii. p. 505 (1890); Eagle Clarke, Ibis, 1894, p. 534, 1895, p. 474; Grant, Ibis, 1896, p. 473.

Thriponax philippinensis, Steere, List Birds & Mamm. Philippines, p. 8 (1890).

As briefly indicated in my previous paper on the birds of Mindoro (*cf.* p. 473), *T. philippinensis*, Steere, is undoubtedly a synonym of *T. hargitti*. The types have been compared and agree in all particulars.

Mr. Whitehead has sent us a series of this bird from the neighbourhood of the Canloon volcano, and it has already, quite correctly, as it now appears, been placed on the Negros list of birds by Mr. Clarke. It has also been recorded (under the name of *T. philippinensis*) from Masbate, Guimaras, and Panay, as well as from the island of Palawan, where the types of *T. hargitti* were collected.

The bird from Negros recorded by Hargitt under the name of *T. javensis* (*cf.* Cat. B. Brit. Mus. xviii. p. 500, specimen *x'*, and Ibis, 1895, p. 475) should, in my opinion, be referred to *T. pectoralis*, all the feathers of the chest being widely margined with whitish buff.

66. *XANTHOLEMA ROSEA* (Dumont); Shelley, Cat. B. Brit. Mus. xix. p. 96 (1891).

Xantholema intermedia, Shelley, *op. cit.* p. 97; Bourus &

Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. i. pp. 36, 51 (1894).

With the additional materials provided by the acquisition of Prof. Steere's Philippine collection, and the series recently forwarded by Mr. Whitehead from the Canloon volcano in Negros, we have a comparatively large series of this Barbet for comparison, and I am bound to confess that the characters given by Capt. Shelley as distinguishing his *X. intermedia* appear too slight to justify its separation from typical *X. rosea*. That the Philippine birds average slightly larger than those from Java and Sumatra is true enough, but the colour of the cheek-band (which appears to be his most important difference) varies in individuals, and we find a male from Cebu with these parts almost entirely black, only the faintest tinge of olive-grey being visible. Messrs. Bourns and Worcester state that examples from Cebu examined by them exhibit the same peculiarities, and are thus to all intents and purposes typical *X. rosea*. All our Negros birds have the cheek-stripe washed with olive-grey posteriorly, some more, some less; this also agrees with the observations of our American friends. According to them, specimens from Tablas have the cheek-stripe washed with *olive-green* instead of olive-grey, but we have not examined any birds from this island. On the whole, we are not inclined to consider the Philippine birds even subspecifically distinct from *X. rosea*.

67. *SURNICULUS VELUTINUS*, Sharpe; Shelley, Cat. B. Brit. Mus. xix. p. 230 (1891).

There is a male of this little Black Cuckoo, shot on the 12th of March. This is the first record of its occurrence in Negros, though it has previously been met with in Samar, Mindanao, Basilan, Sulu, and Tawi Tawi.

68. *HIEROCOCCYX SPARVERIODES* (Vig.); Shelley, Cat. B. Brit. Mus. xix. p. 332 (1891).

As long ago as the year 1856 the large Hawk-Cuckoo was recorded by Gould from the island of Luzon under the name of *Cuculus strenuus*, for he supposed the Philippine bird to

represent a distinct species, which, however, is not the case. It has since been obtained by Messrs. Bourns and Worcester from the Calamianes, but is now recorded for the first time from Negros. The bird sent by Mr. Whitehead is a female in immature plumage, and the wing measures 8·7 inches. We note in Capt. Shelley's Catalogue that the length of the wing is given, both in the key to the genus and in the description of this species, as 8·1 inches. This is evidently a misprint for 9·1. Blanford (*Faun. Brit. Ind., Birds*, iii. p. 212, 1895) gives the length of the wings as 8·5 to 10 inches, but 9·1 inches is the average length.

69. *CUCULUS MICROPTERUS*, Gould ; Shelley, *Cat. B. Brit. Mus.* xix. p. 241 (1891).

Although there is nothing strange in the occurrence of the Indian Cuckoo in the Philippine Islands, for it extends to China, Japan, and Eastern Siberia in summer, and has also been met with in Java, Borneo, and the Moluccas, this is the first time it has been met with in this group. Mr. Whitehead sends a nearly adult female, shot in the vicinity of the Canloon volcano on the 16th of March, 1896.

70. *CACOMANTIS MERULINUS* (Scop.) ; Grant, *Ibis*, 1895, p. 466.

The Rufous-bellied Plaintive Cuckoo is universally distributed throughout the Philippine Islands, and Mr. Whitehead again sends both adult and immature birds from the volcano of Canloon.

71. *CACATUA HEMATUROPYGIA* (P. L. S. Müller) ; Grant, *Ibis*, 1895, p. 263, 1896, p. 475.

A female of the Philippine Cockatoo from the lower forests of Canloon.

72. *PRIONITURUS DISCURUS* (Vieill.) ; Grant, *Ibis*, 1895, p. 263.

The specimens of the Philippine Racquet-tailed Parrot collected in Negros are precisely similar to those previously described from Catanduanes, the blue on the head being confined to the middle of the crown, and shading into green on the nape and forehead.

73. *TANYGNATHUS LUCONENSIS* (Linn.); Grant, Ibis, 1894, p. 410, 1896, p. 475.

We have received several examples of the Blue-crowned Parrakeet, and on looking over the whole of the series from the different islands now available for comparison, I have noted the following particulars :—

Adult birds from Luzon, Mindoro, and Marinduque have more green on the forehead, and the blue of the crown is less extended and is of a much paler verditer colour. Wings measure :—

	Male. in.	Female. in.
Luzon	7·4-7·6	—
Mindoro	7·2-7·5	7·1
Marinduque	7·5	—

All the adult examples from Masbate, Panay, Guimaras, and Negros have the green on the forehead narrower and the blue of the crown more extended and of a deep cobalt-colour. Wings measure :—

	Male. in.	Female. in.
Masbate	7·6	—
Panay	—	7·1
Guimaras	7·6	7·1
Negros	7·25-7·5	7·15

Palawan birds are much like those from Luzon. Wing in the male measures 7·3-7·5 inches.

Adult birds from Cebu resemble those from Luzon in having more green on the forehead, but the blue on the crown is darker, as in the other central-island birds. Wings measure :—

	Male. in.	Female. in.
Cebu	7·45	7·05

We have but few adult examples from Mindanao, Melanipa, and Basilan, but these have the forehead and fore part of the crown green, only the back of the crown and occiput being pale bluish. Wings measure :—

	Male. in.	Female. in.
Basilan	7·6-7·8	7·1
		2 R 2

We have received no really adult birds from Mindanao or Melanipa:

The only Sulu bird in the collection resembles the bird from Basilan in colouring, but is considerably larger. Wing measures 8·3 inches.

A male and female collected by Mr. A. H. Everett on the island of Mantanani are determined by Count Salvadori (*cf.* Cat. B. Brit. Mus. xx. p. 424, 1891) as immature examples of *T. luconensis*; but I think this is a mistake, for both the examples in question have the blue on the top of the head extending from the back of the forehead to the nape, which leaves no doubt in my mind that they are adult birds; they resemble immature examples of *T. luconensis* in having the shoulders green instead of black, and all the feathers of the inner and median wing-coverts green margined with orange-yellow. I propose to separate the Mantanani bird under the name of *Tanygnathus salvadorii*.

	Total length.	Wing.	Tail.	Tarsus.
	in.	in.	in.	in.
Type of ♂	12·5	7·3	4·7	0·75
Type of ♀	12·2	7·15	4·8	0·7

74. TANYGNATHUS EVERETTI, Tweedd.; Grant, Ibis, 1895, p. 116.

Everett's Blue-rumped Parrakeet is recorded for the first time from Negros; adults of both sexes were obtained in the vicinity of the Canloon volcano. Count Salvadori was evidently uncertain (*cf.* Cat. B. Brit. Mus. xx. p. 432, 1891) as to the meaning of the white bill in certain specimens in the Museum collection. I find this is characteristic of the female; the plumage is perfectly similar to that of the male.

75. LORICULUS REGULUS, Souancé; Steere, List Birds & Mamm. Philippines, p. 6 (1890); Salvad. Cat. B. Brit. Mus. xx. p. 523 (1891); Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 36 (1894).

The Crowned Lorrikeet is met with in the central Philippine Islands; it has at present been recorded from Masbate, Sibuyan, Romblon, Tablas, Panay, Guimaras, and Negros.

Mr. Whitehead sends several beautiful pairs shot on the Canloon volcano.

76. *OSMOTRERON AXILLARIS* (G. R. Gray, MS., *fide* Bonap.); Grant, Ibis, 1895, p. 467.

We have a fine male of the Philippine Green Pigeon in the collection.

77. *PHABOTRERON MACULIPECTUS*, Bourns & Worcester, Occ. Pap. Minnesota Acad. Sci. i. no. i. p. 10 (1894).

Only a pair of this rare Pigeon have been received. They belong to the large-billed group of the "Brown Pigeons," with metallic purplish-blue mantles. This species has been very accurately described by Messrs. Bourns and Worcester, who also characterize three other large-billed species (*P. brunneiceps*, *P. frontalis*, and *P. cinereiceps*) met with respectively in Basilan, Cebu, and Tawi Tawi. If the measurement of the culmen of *P. frontalis* (2 inches) is really correct, this bird must indeed have a gigantic bill! The present species has a very large culmen, but it measures only 1.02 inch.

The large- and small-billed species of this group appear to occur side by side in many of the islands.

Large-billed Species.	Small-billed Species.
<i>P. amethystina</i> . Luzon, Samar, Leyte, Panaon, Dinagat, and North Mindanao.	<i>P. leucotis</i> . Luzon, Mindoro.
<i>P. maculipectus</i> . Negros.	<i>P. nigrorum</i> . Panay, Guimaras, Negros, and Cebu.
<i>P. frontalis</i> . Cebu.	<i>P. occipitalis</i> . Basilan.
<i>P. brunneiceps</i> . Basilan.	<i>P. brevirostris</i> . Siquijor, Bohol, Leyte, Samar, Dinagat, Mindanao, and Sulu.
<i>P. cinereiceps</i> . Tawi Tawi.	

78. *PHABOTRERON NIGRORUM*, Sharpe; Salvad. Cat. B. Brit. Mus. xxi. p. 68 (1893).

Mr. Whitehead has forwarded a series of beautiful skins of this small-billed Negros Brown Pigeon, some of which bear the same date as the male of *P. maculipectus* mentioned above, and were evidently shot in the same locality.

Prof. Steere is of opinion that the Brown Pigeons from Bohol, Leyte, and Samar represent two species distinct from *P. brevirostris*, Tweed., the type of which was obtained at

Zamboanga, South Mindanao. Our only specimen from Bohol, a male in the Steere collection, shot on the 21st of March, is in very worn plumage, the feathers of the breast and belly being much abraded. The underparts of this bird are paler and browner in colour than in the specimens from Leyte and Samar; but this is easily accounted for by the worn state of the plumage, and undoubtedly the birds from all three localities belong to one and the same species. Again, the birds from these three islands differ from the type of *P. brevirostris* from Mindanao in having the forehead, chin, and upper throat white; but we have a specimen from the island of Dinagat which is practically similar to the Samar birds, and so closely approaches some examples from Mindanao that it cannot be distinguished. All that can be said is that specimens of *P. brevirostris* from Bohol, Leyte, Samar, and Dinagat have the forehead and throat whiter than the majority of typical examples from Mindanao.

In the Steere collection there is a specimen of typical *P. leucotis* labelled "Catbalogan," Samar. This is surely a mistake.

79. *PTILOPUS OCCIPITALIS*, G. R. Gray; Grant, Ibis, 1895, p. 116.

We have two males of this Yellow-breasted Fruit-Pigeon, collected near the base of the Canloon volcano.

80. *CARPOPHAGA CHALYBURA*, Bonap.; Grant, Ibis, 1896, pp. 124, 477.

There is a male of Bonaparte's Philippine Fruit-Pigeon with the purple-grey band across the nape well defined.

81. *CARPOPHAGA POLIOCEPHALA*, G. R. Gray; Grant, Ibis, 1895, p. 264, 1896, p. 476.

Three specimens of this magnificent Green Fruit-Pigeon do not differ from the bird previously obtained by Mr. Whitehead in Mindoro and Luzon.

82. *PTILOCOLPA CAROLA* (Bonap.); Grant, Ibis, 1896, p. 125.

The Grey-breasted Fruit-Pigeon was commonly met with

in flocks on the volcano of Canloon at an elevation of 6000 feet.

Mr. Whitehead has at last succeeded in obtaining some fine female examples, and has now set at rest any remaining doubt about *P. griseipectus* being the male and *P. carola* the female of one and the same species.

83. *COLUMBA GRISEIGULARIS* (Walden & Layard) ; Grant, *Ibis*, 1895, p. 469.

A splendid adult female of the large Grey-throated Wood-Pigeon was obtained high up on the Canloon volcano.

84. *MACROPYGIA TENUIROSTRIS*, Gray ; Grant, *Ibis*, 1895, p. 469.

An adult female of the Slender-billed Cuckoo-Dove bears out my previous remarks on this species. We have also received two fine adult males.

85. *CHALCOPHAPS INDICA* (Linn.) ; Grant, *Ibis*, 1896, pp. 125, 477.

A female of the Indian Bronze-winged Dove, which is widely distributed throughout the group.

86. *TURNIX FASCIATA* (Temm.) ; Grant, *Ibis*, 1895, pp. 265, 471.

An adult male of the Philippine Bustard-Quail completes the list of Negros birds.

XLVIII.—*Bulletin of the British Ornithologists' Club.*

No. XXXVII. (June 26th, 1896.)

THE thirty-sixth Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 17th of June, 1896.

Chairman : P. L. SCLATER, F.R.S.

Members present :—E. BIDWELL, Col. BINGHAM, W. E. DE WINTON, J. GERRARD, W. R. OGILVIE GRANT, ERNST HARTERT, R. NESHAM, HEATLEY NOBLE, R. LLOYD PATER-

SON, C. E. PEARSON, H. J. PEARSON, F. PENROSE, HON. N. C. ROTHSCHILD, HON. W. ROTHSCHILD, HOWARD SAUNDERS (*Treasurer*), REV. H. H. SLATER, LIONEL A. WILLIAMS.

Visitors: REV. J. E. KELSALL, H. M. PHIPSON.

Mr. H. J. PEARSON exhibited some eggs of *Larus argentatus* from Northern Norway, suffused and blotched with salmon-pink or reddish buff, and also some of a pale blue colour. Specimens of the former character had previously been ascribed to the Great Black-backed Gull and to the Glaucous Gull, but the authenticity of the present examples was beyond question. Discussion followed on the cause, and allusion was made to reddish eggs of the Raven and other birds.

Mr. E. BIDWELL exhibited abnormal eggs of *Vanellus cristatus* and other species.

The Hon. WALTER ROTHSCHILD exhibited a handsome Pigeon from the island of Sumba, or Sandalwood, which he described as follows:—

PTILOPUS DOHERTYI, sp. nov.

Male adult. Head, sides of head, and throat white; occiput and nape bright magenta-purple: the nape-feathers rather long. Neck and breast very light peach-blossom-pink, feathers with basal half pure white. Mantle—including upper wing-coverts—dark olive, washed with green in some lights and with dark bluish purple in others. Wing dark slate-grey, outer webs strongly glossed with bright metallic purple. Rump and lower back greyish olive-green. Tail and longest upper tail-coverts bright reddish purple (dahlia-purple, Ridgway, pl. viii. fig. 2). Colour of abdomen separated from that of the breast by a yellowish-white semi-circular band; abdomen plum-purple. Flanks, vent, and thighs greenish grey, the last bordered with yellow; tarsi pale grey. Under tail-coverts primrose-yellow, with centres and most of inner webs greyish green. Tail below brownish

ash colour. Beak blackish, anterior third pale orange; toes purplish pink. Wing 6·9 inches, tail 5·3, bill 0·7.

Hab. Sumba.

Coll. W. Doherty, Feb. 1896.

Mr. ROTHSCHILD further exhibited a fine series of Humming-birds, obtained in Peru and California by Mr. O. T. Baron, and mounted by him from the flesh. Amongst them were several examples of the remarkable racket-tailed *Loddigesia mirabilis* from Chachapoyas, once so rare in collections; also specimens of *Thaumastura coræ*, *Oreotrochilus stolzmanni*, and *Aglaëactis aliciae*.

Mr. ERNST HARTERT stated that the Tring Museum had received some interesting collections made by Mr. Everett in the islands of Djampea and Kalao, between Celebes and Flores. A full account of these, with descriptions of some new species and subspecies, would appear in the forthcoming number of the 'Novitates Zoologicæ'; meanwhile, as examples of the collections, specimens were exhibited of the rare *Oriolus boneratensis*, Meyer, and of *Trichoglossus forsteni*.

Mr. HARTERT also exhibited skins of a new *Pachycephala* and a new *Pitta* collected by the well-known entomologist William Doherty on the island of Sumba, or Sandalwood. These he characterized as follows:—

PACHYCEPHALA FULVIVENTRIS, sp. nov.

Pachycephala speciei *P. fulvotincta* dictæ affinis, sed maris pectore abdomineque toto saturate aurantio-ochraceis, alis longioribus. ♀ simillima feminae speciei *P. fulvotincta* dictæ, alis longioribus, gutture albidior, abdomine flavicantiore distinguenda. Al. ♂ 86·6, ♀ 84 mm., culm. 26, caud. 66·5.

Hab. Sumba.

PITTA MARIA, sp. nov.

Rather close to *Pitta irena*, Müll., but somewhat darker brown below, the black of the throat reaching lower down, the red colour in the middle of the abdomen evidently not mixed with black on its upper part, and the wing, instead

of having a large white speculum on the outer six or seven primaries, is only ornamented with a small concealed spot of white on the fifth quill. Culm. 23 mm., wing 109, tars. 35.6.

Hab. Mountains of Sumba. Named in honour of Miss Maria de Korte.

MR. HOWARD SAUNDERS gave a short account of a visit made by Col. H. W. Feilden and himself to the Pyrenees, chiefly the Eastern districts. Continuously unfavourable weather and heavy falls of soft snow hampered their movements, but they managed to obtain some interesting facts regarding the distribution of birds. Inasmuch as Catalonia, the chief province visited, was the most prosperous and highly cultivated portion of Spain, birds of prey and other conspicuous species could hardly be expected there, while the lagoons and swamps on the Gulf of Rosas, which made so brave a show on the map, were now either drained and cultivated, or were peaty pools and mere bog-holes. Investigation indicated that the asserted existence of *Tetrao tetrix*, even in the Eastern Pyrenees, is an error; that *Bonasa betulina* is seldom, if ever, found to the eastward of Luchon, and chiefly to the westward of Gabas; while *Tetrao urogallus* is more abundant in the spruce-fir woods than is generally supposed. There was no evidence that *Gyps fulvus* nests anywhere within the French frontier. A line of migration of some importance appeared to pass from Catalonia, over the Col de Puymorens (6300 feet), to the valley of the Ariège, in France; and Turtle-doves, Willow-Warblers, &c. were found above snow covered with footprints of the Ptarmigan.

XLIX.—Notices of recent Ornithological Publications.

[Continued from p. 420.]

95. *Barrett-Hamilton on the Birds of the Harrow District.*

[Harrow School Scientific Society's Memoirs. 1891. Harrow Birds. By G. E. H. Barrett-Hamilton. 8vo. Harrow, 1892.]

This is a useful supplement to Mr. J. E. Harting's 'Birds

of Middlesex,' an excellent work in 1866, though now somewhat out of date. Mr. Barrett-Hamilton has been assisted by Dr. Edward Hamilton—whose experiences of Harrow began in 1828—and by many other observers; the result being a list of 198 species, including one in the *Addenda* to be found at the *beginning* of the volume. Altogether this is one of the best books of its class: clear, concise, and free from padding.

96. *Butler on Foreign Cage-Finches.*

[Foreign Finches in Captivity. By Arthur G. Butler, Ph.D., F.L.S., &c. Illustrated with Sixty Plates by F. W. Frohawk, F.E.S.; coloured by hand. Parts IV.-X. 4to. London, 1894-96. L. Reeve & Co.]

Mr. Butler has now completed his handsome volume, having issued six parts since our last notice (*Ibis*, 1895, p. 390). The work can hardly be considered strictly scientific, but it contains good coloured plates, drawn by Mr. Frohawk, which may often be useful for reference, and there are many particulars about the ways of Finches in captivity which will not be found elsewhere.

The following species are illustrated in the last seven parts:—

Part IV. *Phonipara canora*; *Stictospiza formosa*; *Sporaginus melpodus*, *S. subflavus*, *S. amandava*; *Lagonosticta minima*, *L. cerulescens*; *Granatina granatina*.

Part V. *Estrilda phenicotis*, *E. cinerea*, *E. astrilda*; *Aegintha temporalis*; *Neochmia phaeton*; *Emblema picta*; *Pytelia afra*, *P. phœnicoptera*; *Zonæginthus bellus*.

Part VI. *Erythrura psittacea*, *E. prasina*; *Poephila mirabilis* and var. *gouldiæ*, *P. cincta*; *Steganophora guttata*; *Amadina fasciata*; *Teniopygia castanotis*.

Part VII. *Stictoptera bichenori*; *Aidemosyne modesta*, *A. malabarica*, *A. cantans*; *Uroloncha acuticauda*, *U. striata*; *Munia punctulata*, *M. castaneithorax*, *M. malacca*.

Part VIII. *Munia atricapilla*, *M. maja*, *M. oryzivora*; *Amauresthes fringilloides*; *Spermestes cucullata*, *S. bicolor*; *Hypochaeræ ænea*; *Vidua principalis*.

Part IX. *Steganura paradisea*; *Chera procne*; *Penthetria ardens*; *Penthetriopsis macrura*; *Pyromelana capensis*, *P. afra*.

Part X. *Pyromelana flammiceps*, *P. oryx*, *P. franciscana*; *Quelea quelea*; *Q. russi*; *Foudia madagascariensis*; *Nesacanthus eminentissima*; *Ploceus baya*.

97. *Büttikofer on his Expedition to Central Borneo.*

[Zoologische Skizzen aus der niederländischen Expedition nach Central Borneo. Von J. Büttikofer. C. R. du Troisième Congrès Intern. de Zool., Leyde, 1895, pp. 211-227. 1896.]

Mr. Büttikofer has now issued in print the very interesting account of his Bornean Expedition of 1893-4 which he gave to the International Zoological Congress at Leyden last year. On the 17th November, 1893, he left Batavia for Pontianak on the west coast of Borneo, and proceeded up the river Kapuas along with Dr. Hallier, the botanist of the expedition, also accompanied by Prof. Molengraaff as geologist, and Dr. Nieuwenhuis as anthropologist. After five days' steaming, the head of the navigation of the Kapuas was attained at Poeloe Sibau, 896 kilometres from its mouth. Here, nearly in the centre of Borneo, two stations were selected for collecting purposes: first, on Mount Kenepai, which rises not far from the Sarawak boundary to an elevation of some 3600 feet, and, secondly, on the western slope of the Liang Kubung range, where a convenient resting-place was discovered in a cavern at a height of about 2400 feet. A lively description is given of both these stations and their surrounding attractions—Gibbons, Hornbills, and other rarities, and in the latter locality examples of *Calyptomena hosei* were obtained. At the end of July 1894 Mr. Büttikofer left Borneo and returned to Europe. Although the collection of birds thus made is not yet completely worked out, it is understood that no examples of new species were obtained: the avifauna of this part of Borneo being nearly identical with that of the interior of Sarawak, where Mr. Hose has worked so long and so successfully. We shall all look forward to Mr. Büttikofer's narrative of his expedition, which will be published as soon as the whole of the various collections have been thoroughly examined.

98. *Cory on the Natural History of Florida.*

[Hunting and Fishing in Florida, including a Key to the Water-birds known to occur in the State. By Charles B. Cory. Boston, Mass., 1896.]

Mr. Cory has passed ten winters in Florida, engaged in

collecting, and is consequently well qualified to give us an account of the various sports pursued there, as well as of the Mammals, Birds, and Fishes to be met with in what is still, to a great extent, a veritable wilderness. This he has done in the present nicely printed and well illustrated volume. Commencing with the Seminole Indians and their manners and customs, he proceeds to the "panther" (*i. e.* puma), black bear, deer, alligators, and turkeys of the State; the hunting-grounds are then discussed generally, and a chapter is devoted to a systematic list of the Mammals. The second half of the volume is occupied by a Key to the Water-birds of Florida, being those most likely to engage the sportsman's attention, followed by a systematic list of these according to the nomenclature and classification of the A. O. U.; concise descriptions and notes on the range and occurrence in Florida being appended to each species. We have no doubt that this will serve as a very useful handbook for the numerous winter visitors to the Gulf State. For the benefit of the scientific worker the Key is issued separately in limp covers: an excellent arrangement.

99. *Dresser's Supplement to the 'Birds of Europe.'*

[A History of the Birds of Europe, including all the Species inhabiting the Western Palearctic Region.—Supplement. By H. E. Dresser, F.L.S., F.Z.S., &c. Part VI. December 1895; Part VII. March 1896; Part VIII. June 1896.]

The sixth, seventh, and eighth parts of Mr. Dresser's Supplement contain coloured figures of the following species:—

Part VI. *Podoces panderi*; *Garrulus hyrcanus*; *Picus leucopterus*, *P. pælzami*, *P. mauritanus* (head), *P. numidicus* (head), *P. minor* (head), *P. danfordi* (head); *Gecinus flavirostris*; *Scops brucei*; *Bubo ascalaphus*; *Accipiter badius*; *Mergus cucullatus*.

Part VII. *Mareca americana*; *Columba casiotis*, *C. eversmanni*; *Pterocles senegallus*, *P. coronatus*; *Bonasa griseiventris*; *Porphyrio poliocephalus*, *Ægialitis vocifera*; *Hæmatopus moquini*; *Totanus macularius* [misprinted *maeularius* on Plate].

Part VIII. *Ibis æthiopica*; *Phasianus persicus*, *P. principalis*; *Tetrao uralensis*; *Ægialitis pecuaria*; *Totanus solitarius*, *T. flavipes*; *Sterna maxima*; *Pelagodroma marina*.

The following are described but not figured :—*Garrulus minor*, *Milvus melanotis*, *Turtur cambayensis*, and *Falco milvipes*; the last for the excellent reason that it has already appeared in the ‘Birds of Europe’ as a very old Saker. We observe that, under *Porphyrio poliocephalus*, in spite of what Selater has stated in a former number of this journal (Ibis, 1879, p. 196), Mr. Dresser still quotes “*Porphyrio veterum*” as a specific name used by S. G. Gmelin, instead of only as having been wrongly attributed to him by later authors. As regards *Grus antigone*, we are doubtful as to the authenticity of the alleged occurrence of this Crane in Central Asia. It is, we believe, a resident Indian species, which very seldom, if ever, enters the boundaries of the Western Palearctic Region.

100. *Finn on Experiments with Crateropus canorus.*

[Contributions to the Theory of Warning-colours and Mimicry. No. 1. By Frank Finn, B.A., F.Z.S. Journ. Asiatic Soc. Bengal, 1895, p. 344.]

This paper has been sent to us for notice, but it is more connected with entomology than with ornithology—the common Indian Babbler being merely the “vile body” through which certain experiments with insects were conducted. And as yet no definite results appear to have been obtained.

101. *Finsch on Bird-protection and Fisheries.*

[Ueber Vertretung von Vogelschutz- und Fischerei-Interessen durch eine Centrale ökonomischer Ornithologie. Von Dr. O. Finsch. Ornith. Monatss. Deuts. Ver. Schutze d. Vogelw. 1895, No. 8.]

Dr. Finsch shows that in three years the Deutsche Fischerei Verein has spent upwards of £2300 in premiums for the destruction of certain animals supposed to be injurious to fisheries. Of this about £750 was devoted to the destruction of 15,436 birds—namely, 12,468 Herons, 86 ‘Fishing-eagles,’ 42 Harriers and Kites, 1569 Dippers, Kingfishers, &c., and 1271 Cormorants. He points out that, so far from being injurious to fisheries, Dippers are very useful, and that the injury caused to fishes by the other birds in the list is a matter of question, which ought to be

settled in a scientific manner. In America the State has taken up the investigation and control of animals supposed to be injurious, by the appointment of a "Division of Economic Ornithology and Mammalogy" in the Department of Agriculture. In Hungary the "Ungarische ornithologische Centrale," whose chief object is the investigation of the Migration of Birds, has, in a similar manner, been placed under the aegis of the Minister of Education. Dr. Finsch urges that in conformity with these precedents, and in the interests of Forestry, Agriculture, and Fisheries, an Institute for the study of Economic Ornithology should be created by the State in Germany.

102. *Godman and Salvin's 'Biologia Centrali-Americana.'*

[*Biologia Centrali-Americana*: or, Contributions to the Knowledge of the Fauna and Flora of Mexico and Central America. Edited by F. Du Cane Godman and Osbert Salvin. (Zoology.) Parts CXXVI. CXXX. 4to. London, 1896. Published for the Editors by R. H. Porter, 7 Princes Street, Cavendish Square, W.]

Since our last notice of this excellent work (*Ibis*, 1896, p. 143) good progress has been made. The five parts recently issued contain pp. 481-544 of the "Birds," and give a complete account of the Central American members of the families Trogonidæ, Galbulidæ, Bucconidæ, and Cuculidæ, the last-named group being not quite concluded. We hope soon to have the pleasure of binding up the second volume, which will finish with the Psittacidæ.

103. *Hartert on new Birds from Celebes.*

[Preliminary Descriptions of some new Birds from the Mountains of Southern Celebes. By Ernst Hartert. *Novit. Zool.* iii. p. 69.]

Mr. Hartert describes four new birds from a "very fine collection" lately made by Mr. Alfred Everett in the mountains of Southern Celebes—*Androphilus everetti*, *Chlorocharis squamiceps*, *Cataponera turdoides*, and *Siphia omissa*. *Cataponera* is a new genus allied to *Garrulæ*. A full list of the collection is promised, and it will be of interest as showing the similarity of some of the species to those of the highlands of Borneo.

104. *Harvie-Brown and Buckley on the Fauna of the Moray Basin.*

[A Fauna of the Moray Basin. By J. A. Harvie-Brown and Thomas E. Buckley. Two vols. Royal 8vo, with Map, Plates, & Cuts. Edinburgh: David Douglas, 1896.]

The completion of these two volumes makes an important advance in the series of well-executed works which Messrs. Harvie-Brown and Buckley have planned to illustrate the Natural History of the northern parts of Great Britain. Reference to the clearly-drawn map at the end of the second volume, and the interesting chapters on the watersheds and other physical features which occupy the first half of the first volume, will show that the Moray Basin, as defined by our authors, occupies a very large and important area of N.E. Scotland. It is divided into two portions by the Moray Firth and Loch Ness, and occupies the whole, or large parts, of Sutherland, Ross and Cromarty, Inverness, Nairn, Banff, and Elgin. After describing the physical features of this wide district, the authors take up the Mammals, and then the Birds, with which we are more immediately concerned. We need hardly say, after the well-known abilities of both our authors, that this branch of their subject is most completely treated. The field-notes on every species in the List are full and complete, as in the former works of the same series, and will delight the heart of the lover of birds whether he studies them in the cabinet or in the field. The present volumes are well printed and got up, and excellently illustrated, in a style consistent with the high reputation of the publisher.

105. *Lilford's 'Coloured Figures of British Birds.'*

[Coloured Figures of the Birds of the British Islands. Issued by Lord Lilford, F.Z.S., &c., President of the British Ornithologists' Union. Part XXX., February 1895; XXXI., June 1895; XXXII., April 1896. Royal 8vo. London.]

Since our last notice (*Ibis*, 1895, p. 282), three more parts of our lamented late President's excellent work have made their appearance. They speak for themselves, and no

comment upon them is required for lovers of bird-life. We are much pleased to be able to announce that the task of completing this work has been committed to excellent hands, and that there is every prospect of it being brought to a speedy conclusion.

The following are the species now figured:—

Part XXX. *Linota hornemanni*; *Nyctala tengmalmi*; *Falco gyrfalco*; *Clangula albeola*; *Cosmonetta histrionica*; *Harelda glacialis*; *Somateria spectabilis*; *Columba livia*; *Ægialitis cantiana*, *Æ. curonica*; *Phalaropus fulicarius*; *Scolopax gallinula*.

Part XXXI. *Aquila nævia*; *Pandion haliaëtus*; *Somateria stelleri*; *Edemia perspicillata*; *Mergus cucullatus*; *Fulica atra*; *Edicnemus scolopax*; *Scolopax gallinago*; *Tringa temminckii*; *Totanus hypoleucus*; *Larus melanocephalus*; *Lestris richardsoni*.

Part XXXII. *Turdus sibiricus*; *Parus major*; *Muscicapa atricapilla*; *Fringilla montifringilla*; *Pyrrhula enucleator*; *Columba palumbus*; *Numenius phaeopus*; *Lestris parasiticus*; *Procellaria leucorrhœa*; *Puffinus obscurus*; *Uria brien-nichi* (two plates).

106. Lloyd on the Parrots of British Guiana.

[Some Guiana Parrots. By C. A. Lloyd. 'Timehri,' new ser. ix. p. 270.]

Mr. C. A. Lloyd gives us some excellent field-notes on the Psittacidæ of British Guiana. The Indians assert that *Chrysotis ochrocephala* "frequently breeds in company with *C. amazonica*, and that young birds of both species are often taken from the same nest." The species of *Brotogeris* generally lay their eggs in the deserted mounds of the Termites. *Caica melanocephala* "nests in holes high up in the trunks of trees." *Ara ararauna* breeds on the savannas, "making its nest in the dead trunks of the Eta Palm (*Mauritia flexuosa*)."

Mr. Lloyd concludes with a list of the 31 Parrots of the Colony and their "local habitats," known to him.

107. Meyer's Illustrations of Birds' Skeletons.

[Abbildungen von Vögel-Skeletten. Herausgegeben mit Unterstützung der Generaldirection der königlichen Sammlungen für Kunst und Wissenschaft. VII.—VOL. II.

schaft in Dresden. Von Dr. A. B. Meyer. Lief. XIX.–XXI. Folio. Dresden, 1894.]

Since our last notice of this important work (*Ibis*, 1894, p. 126), parts xix., xx., and xxi. have been issued together and raise the series of lithographs to two hundred and ten in number. No systematic order is observed in the numbering of the plates, and we fear that this may interfere with the usefulness of the work when brought to a conclusion.

108. *Milne-Edwards on the Similarity of the Faunas of the Mascarene Islands and the Antarctic Islands.*

[Sur les ressemblances qui existent entre la faune des Iles Mascareignes et celle de certaines de l'Océan Pacifique Austral. Par M. A. Milne-Edwards. C. R. d. Séances du Troisième Congrès Intern. de Zool. Leyde, 1896, p. 75.]

This is a report of a discourse delivered by M. Milne-Edwards at the second full meeting of the Third International Congress of Zoology at Leyden on Sept. 18th, 1895. The author reviews the discoveries of extinct birds made in Mauritius, Bourbon, and Rodriguez, and points out that, especially as regards the Ralline forms (*Aphanapteryx*, &c.), they show some surprising similarities to the fossil birds lately discovered by Dr. H. O. Forbes in the Chatham Islands (see *Ibis*, 1893, p. 544). The strange correspondence between the Dinornithidæ of New Zealand and the *Æpyornithidæ* of Madagascar is also pointed out.

109. *Nehrling's 'North-American Birds.'*

[North-American Birds. By H. Nehrling. With 36 Coloured Plates after Water-colour Paintings by Prof. Robert Ridgway, Smithsonian Institution, Washington, D.C., Prof. A. Goering, Leipzig, and Gustav Muetzel, Berlin. Parts IX.–XIV. 4to. Milwaukee, Wis., 1894–96.]

We have already stated (*Ibis*, 1894, p. 127) our candid opinion of Mr. Nehrling's 'North-American Birds.' Some of the plates are certainly good specimens of what can be done by chromolithography, while of others we cannot speak so favourably. The letterpress appears to have been carefully compiled.

110. *North on the Birds of Central Australia.*

[Report on the work of the Horn Scientific Expedition to Central Australia. Part II.—Zoology. Aves, by Alfred J. North. 4to. London and Melbourne, 1896.]

The bird-skins obtained by Mr. G. A. Kearland in Central Australia during the Horn Expedition have been examined by Mr. Alfred J. North, C.M.Z.S., the Ornithologist of the Australian Museum, Sydney, who reports that from an ornithological point of view the results are highly satisfactory, especially as the journey was made during a somewhat dry season, and rapid travelling interfered with thorough investigation. The specimens collected are referred to 78 species, amongst which are five novelties already characterized in this journal (see *Ibis*, 1895, p. 339). Mr. Kearland's field-notes are appended to each species. *Calamanthus campestris isabellinus* from Missionary Plain is described as a new subspecies, and field-notes are added by Mr. Kearland on 22 species observed during the expedition, but of which specimens were not brought back. Three coloured plates contain figures of *Spathopterus alexandre*, *Ptilotis kearlandi*, *Rhipidura albicauda*, *Xerophila nigricincta*, and *Climacteris superciliosa*. Of the Alexandrine Parrakeet, we may remark, there are now living examples of both sexes in the Zoological Society's Parrot-house.

111. *North on the Nesting of some Australian Birds.*

[Notes on the Nesting of *Calyptorhynchus banksi* and *Erythrodryas rosea*. By Alfred J. North. *Victorian Naturalist*, xii. p. 136 (1896).]

Mr. North describes the eggs of the Banksian Black Cockatoo from specimens obtained in Western Queensland, where this bird lays in holes in big gum-trees along the Darling river; also the nesting of *Erythrodryas rosea*, as observed by Mr. Gabriel at Bayswater, Victoria, in December 1895. He gives a supplementary note on the nest of *Chlamydodera orientalis*, in the Gulf district of Northern Queensland.

112. *Pycraft on the Wing of Archæopteryx.*

[The Wing of *Archæopteryx*. (Illustrated.) By W. P. Pycraft, M.B.O.U. Natural Sci. viii. p. 261.]

Mr. Pycraft now replies to Dr. Hurst's theory that the wing of *Archæopteryx* possessed five digits, and, it must be allowed, very effectually, so far as the evidence to be obtained from the only two specimens of this fossil bird yet discovered is available. He concludes with a useful "summary of the characters of *Archæopteryx*," and gives with it an illustration of the supposed appearance of this remarkable organism, after the fossil in the Berlin Museum.

113. *Report of the Society for the Protection of Birds.*

[Society for the Protection of Birds. Founded February 1889. Fifth Annual Report, January 1st to December 31st, 1895. 8vo. 1896.]

We notice the fifth annual report of the Society for the Protection of Birds in order to say that in our opinion this excellent association deserves support from members of the B. O. U. and from every lover of birds. Its terms of membership are not onerous, and we hope that all our readers will send in their names and subscriptions. The Society's main object is to discourage the wanton destruction of birds, and to excite an interest in their protection, while the present fashion of ladies wearing feathers in their hats is specially and rightly assailed. On this point we may state that several ladies had the audacity to flaunt feathers at a recent meeting of this very Society, and that this piece of cynicism was still more apparent at a meeting of the Anti-vivisectionists.

114. *Richmond on a new Plover.*

[Description of a new Species of Plover from the East Coast of Madagascar. By Charles W. Richmond. Proc. Biol. Soc. Washington, x. p. 53.]

Mr. Richmond bases *Ægialitis thoracica* upon five specimens in the U.S. National Museum, and selects as its type an example obtained by Dr. Abbott in June 1895 at Loholoka on the east coast of Madagascar. It is most nearly related to *Æ. varia* (Vicill.), but differs from it in the presence of a black pectoral band and in other points.

115. *Ridgway's 'Manual of North-American Birds.'*—*Second edition.*

[A Manual of North-American Birds. By Robert Ridgway. Illustrated by 464 outline drawings of the generic characters. Second edition. Philadelphia (Lippincott), 1896. 1 vol. Royal 8vo. 653 pp.]

The object and plan of Mr. Ridgway's well-known 'Manual of North-American Birds' were fully explained to our readers in a notice of the appearance of the first edition, published in 1887 (see 'Ibis,' 1888, p. 137), and we have now before us a copy of the second edition lately issued.

During the eight years which have elapsed between the two editions, 91 species and subspecies have been added to the roll of the North-American Avifauna, and of these 12, having been included in the analytical keys of the first edition, come into the present edition in their right places, only a change in the typography of their names being necessary. The remainder are placed together in an Appendix at the end of the volume. This is certainly not quite a satisfactory plan, as it would be much better to have every species arranged in its proper systematic position. But it was, no doubt, convenient, as saving considerable alterations in the original text, and marginal references are introduced in the principal list to show the exact place where the new matter in the Appendix is to be interpolated. The following new subgeneric terms are proposed in this work:—*Oreospiza* (type *Fringilla chlorura*, Aud.) and *Arremonops* (type *Embernagra rufivirgata*, Lawr.).

116. *Ridgway on a new Geothlypis.*

[Description of a new Species of Ground-Warbler from Eastern Mexico. By Robert Ridgway. Proc. U.S. Nat. Mus. xviii. p. 119.]

Geothlypis flavo-velata is a new species of Ground-Warbler from Eastern Mexico, allied to *G. beldingi* of Lower California.

117. *Ridgway on new Birds from the Galápagos.*

[Preliminary Description of some new Birds from the Galápagos Archipelago. By Robert Ridgway. Proc. U.S. Nat. Mus. xviii. p. 293.]

After a re-examination of Dr. Baur's and other specimens of the Geospizine Finches of the Galápagos Archipelago,

Mr. Ridgway finds it necessary to establish five new species of this group—*Geospiza pachyrhyncha*, *G. fatigata*, *Camarhynchus bindloei*, *C. compressirostris*, and *C. incertus*.

118. *Ridgway on a new Subspecies of Peucedramus.*

[Description of a new Subspecies of the Genus *Peucedramus*, Coues. By Robert Ridgway. Proc. U.S. Nat. Mus. xviii. p. 441.]

The Guatemalan form of *Peucedramus*, hitherto referred to *P. olivaceus* (Giraud), is separated as *P. o. aurantiacus*, subsp. nov.

119. *Rothschild and Hartert on the Birds of the Papuan Islands.*

[Contributions to the Ornithology of the Papuan Islands. By the Hon. Walter Rothschild and Ernst Hartert. I. List of three small Collections from British New Guinea, mostly brought together in the Owen Stanley Mountains.—II. Note on two more specimens of *Astrapia splendidissima*.—III. On the forms of *Macropteryx mystacea*. Nov. Zool. vol. iii. pt. i. March 1896.]

These articles, in which the Paradisoidæ, Ptilonorhynchidæ, and Rallidæ are treated of by Mr. Rothschild and the remaining groups by Mr. Hartert, contain many valuable additions to our knowledge of Papua and its islands.

In the first we have an account of two collections made in British New Guinea, in the district of the Owen Stanley Mountains, by Mr. Rothschild's collector, Anthony, and of a third from high elevations in the Victoria district. Among a number of rare Paradise-birds and Bower-birds, specimens were procured of *Drepanornis albertisi cervinicauda*, ScL.; *Astrarchia stephanie*, Finsch; *Paradisornis rudolphi*, Finsch et Mey.; *Parotia lawesi*, Rams.; *Amblyornis subalaris*, Sharpe; and a female of *Loria mariæ*. A plate is given to illustrate the differences between *A. inornata*, *A. subalaris*, and *A. flavifrons*. Mr. Rothschild now unites *A. macgregoriae*, De Vis, and *A. musgraviana*, Goodwin, to *A. inornata*; he also separates the Jobi form of *Cicinnurus regius* as *C. regius coccineifrons*, subsp. nov. A perfect skin of *Paramythia montium* was procured on Mount Victoria. Mr. Hartert finds that the outer primary is not quite absent in this bird, though much reduced (cf. Selater, 'Ibis,' 1893,

p. 243). Mr. Hartert also describes as new *Pachycephala schlegeli obscurior*, *Ptilotis visi*, *Neopsittacus pullicauda*, and *Reinwardtæna reinwardti griseotincta*.

In the second article, Mr. Rothschild announces the receipt at Tring of two more male specimens of the magnificent *Astrapia splendidissima*, "quite complete."

In the third, Mr. Hartert discusses the various forms of *Macropteryx mystacea*, and institutes a new subspecific name, *M. m. woodfordiana*, for that from the island of Guadalcanar, the New Guinea bird being *M. m. typica*.

120. *Salvadori on Birds from South-eastern New Guinea.*

[Viaggio di Lamberto Loria nella Papuasias Orientale.—XV. Collezioni Ornitologiche descritte da Tommaso Salvadori.—Nota quarta. Uccelli della Nuova Guinea Meridionale-Orientale. Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, xvi. p. 55.]

In this—the last of the collections from Dr. Lamberto Loria—we find 187 species enumerated. The following are described as new:—*Syma megarhyncha* (Moroka) is distinguished from *S. torotoro*; *Ægotheles rufescens* (Moroka); *Monarcha heterurus* (Vikaiku); *Gerygone giulianettii* (Moroka) is distinguished from *G. poliocephala*; *Pachycephala sharpei* (Moroka); *Euthyrhynchus meyeri* (Moroka); *Sericornis perspicillata* and *S. olivacea* (Moroka); *Eupetes loræ* (Moroka); *Manucodia orientalis* (Gerekanumu); *Diphyllodes xanthoptera* (Haveri, Moroka).

121. *Shufeldt on Progress in American Ornithology.*

[Progress in American Ornithology. 1886-95. By R. W. Shufeldt, M.D. Amer. Nat. 1896, p. 357.]

The author compares at full length the numbers of the species and subspecies of American birds admitted in the first edition of the A. O. U. Check-list of American Birds in 1886 and the corresponding numbers admitted in the new edition of 1895, and shows in each case exactly how the alterations came to be made. In the first edition, 738 species and 209 subspecies were recognized; in the second edition, 755 species and 307 subspecies are allowed—an increase of 17 species and 98 subspecies. Dr. Shufeldt points out that no alteration

has been made in the systematic arrangement of the groups in the second edition, although during the nine years intervening between the publication of the two editions much has been done to bring the taxonomy of birds into an improved condition.

122. *Wilson and Evans's 'Aves Hawaiienses.'*

[*Aves Hawaiienses*: the Birds of the Sandwich Islands. By Scott B. Wilson, F.Z.S., assisted by A. H. Evans, M.A., F.Z.S. Part VI. July 1896. 4to. London: R. H. Porter.]

We welcome the arrival of Part vi. of Messrs. Wilson and Evans's '*Aves Hawaiienses*'; the issue of this work having been interrupted since April 1894, when Part v. was published. The new part contains well-drawn plates of the following species:—

<i>Phæornis palmeri.</i>	<i>Hemignathus affinis.</i>
<i>Chasiempis sandvicensis.</i>	<i>Himatione newtoni.</i>
—— <i>slateri.</i>	—— <i>wilsoni.</i>
—— <i>gayi.</i>	—— <i>virens.</i>
<i>Loxops aurea.</i>	—— <i>chloris.</i>
—— <i>rufa.</i>	<i>Fulica alai.</i>
<i>Pseudonestor xanthophrys.</i>	

Mr. Wilson announces that he has determined to revisit the Sandwich Islands in order to aid in their complete ornithological exploration, and that by the time Part vi. is read by his subscribers he hopes to have safely reached Honolulu. The concluding part of the work will appear on his return from what he trusts may be a successful excursion.

123. *Witchell on the Song of Birds.*

[*The Evolution of Bird-Song.* By Charles A. Witchell. London: A. and C. Black, 1896.]

Mr. Witchell is to be congratulated on having produced a highly readable little work upon a subject of great interest. The volume is partly a detailed record of a number of observations taken by the author and partly an attempt to explain the general phenomena of the diversity and complications of the songs of birds. As the author has taken so much pains with the storing of his facts, he is, to our mind, perfectly at

liberty to try to weld together those ascertained facts by hypothesis. One of the most important matters with which he deals is the existence of mimicry of bird by bird, which is a much more widely spread phenomenon than many persons might be aware of. He arrives at the conclusion that this mimicry is essentially comparable to the colour-mimicry seen in so many animals; and, moreover, he finds a mimicry of—or rather, we should say, a protective resemblance to—the environment, which has also its analogue in the facts of animal coloration. The cry of the Robin reminds him of the pattering of raindrops; “the voices of Mallards, Flamingoes, Pelicans, and Herons resemble the croaking of frogs and toads,” and are therefore less likely to attract unwelcome attentions from birds of prey. We may also add that the note of the Bell-bird has the purposeless likeness to the tolling of a bell that the colours of many animals possess to objects which it cannot profit them to imitate. Nor is it certain that in these cases the resemblance of sound has been always produced by an actual effort on the part of the bird itself. The subject is a suggestive one, and is at least as worthy of consideration as the colour-phenomena with which it is sought to compare it.

L.—*Letters, Extracts, Notices, &c.*

WE have received the following letters, addressed “to the Editors of ‘The Ibis’”—

SIRS,—On April 29th last a male of the White-banded Mocking-bird (*Mimus triurus*, Vieill.; Sel. & Huds. Arg. Orn. i. p. 8, pl. i.) was shot near here. It is the first example of this species I have met with in this district during 25 years.

I am,

Yours &c.,

ERNEST GIBSON.

Aj6 (near Cape San Antonio),
Buenos Aires.

May 3rd, 1896.

SIRS,—It has been a doubtful point for some time among British ornithologists which of the Gull-tribe lays the beautiful eggs suffused with salmon-pink or reddish buff now to be seen in many of our collections. The late Mr. Seeböhm attributed some examples taken at Vardö to the Glaucous Gull, while others have been supposed to belong to the Greater Black-back. During a short visit this year to some of the islands in the north of Norway, I had the pleasure of observing a Gull on one of these red eggs. Before my arrival two red eggs had been taken from a nest shown to me, and another nest had been made by the same pair of Gulls a few yards off, in which was a splendid specimen. I lay down behind some rocks about 60 yards away, and, after waiting 20 minutes, a Herring-Gull (*Larus argentatus*) walked quietly up to the nest and settled. I watched her through my glasses for some time, and am as sure of her identity as if I had shot and handled her; but as the owner of the island asked 80 kröner for permission to shoot the bird, his price was rather too high, so I hope my readers will accept the identification, without requiring her skin as proof.

I afterwards saw another egg in a nest 40 miles from the above, and was assured that it belonged to *L. argentatus*; but in this case I did not see the bird sitting. To show how scarce the red eggs are, I may say I went to a large group of islands (10 miles from that first mentioned), where an enormous number of Gulls breed. At the time of my visit 7320 eggs had already been sent to market, and the season was not nearly over. Half of these I estimated to be from *L. argentatus*, yet no red egg has ever been taken on this group of islands.

There is an even larger colony of *L. argentatus* at the north end of Fuglö, a well-known bird-rock, but the Lapps living there say they never find any red eggs.

So far as I have been able to interview the owners of the islands which produce red eggs, they have all assured me these eggs are laid by *L. argentatus*; but I should also state that a Norwegian friend—a good naturalist—has reliable information that a clutch of three red eggs has been taken from *L. marinus*.

I think that the late Mr. Seebohm was in error when he attributed these red eggs generally to *L. glaucus*; at any rate, I was told last year that this species had ceased to breed at Vardö for some time, yet red eggs are still obtained there.

I am,

Yours obediently,

HENRY J. PEARSON.

Bramcote, Notts.

June 28th, 1896.

SIRS,—In reply to your enquiry, I have in my collection eggs of *Scaphidurus ater* (= *Cassidix oryzivorus*) found in nests of *Cassicus persicus*. I have not yet published anything on this subject, but propose to put a notice of this new instance of parasitism in birds in the 'Journal für Ornithologie.'

The eggs that I possess were obtained near Pará, Brazil, by Mr. A. Schulz. This collector found amongst partially incubated eggs of *Cassicus persicus* some that were larger in size and different in shape, and observed that females of *Cassidix oryzivorus* entered the nests of the *Cassicus*. Having shot a female of *Cassidix* while flying into a nest of the *Cassicus*, he found in its oviduct a mature egg resembling the larger eggs met with in the nests of the *Cassicus*. This egg, broken, is now in my collection.

I am,

Yours &c.,

KUSCHEL

Breslau,

August 12th, 1896.

(Polizeirath).

[This discovery, if confirmed, is one of very great interest. We trust that our excellent correspondent at Pará, Dr. Goeldi, will turn his attention to the subject.—EDD.]

SIRS,—So far as I am aware, *Machærhamphus alcinus*, Westerm., has not yet been recorded from Sumatra. A pair of this rare bird of prey was shot, in April 1895, on the nest

at a height of 2000 feet up the Barisan mountains by Dr. Hagen, and one of the specimens is now before me. Besides Malacca, the species occurs in Borneo (P. Z. S. 1882, p. 688, and J. f. O. 1884, p. 216).

I am,

Yours &c.,

A. B. MEYER.

Dresden, August 8th, 1896.

Royal Zoological Museum.

SIRS,—Mr. Chas. W. Andrews, in his paper on the "*Stereornithes*" in 'The Ibis,' January 1896, has shown: (1) that there exists no relationship between *Phororhacos* and *Gastornis*; (2) that the Ratitæ are in many respects more primitive, and not improbably were already sharply separated from the Carinatae when the Stercornithes arose; (3) that some, at least, of the Stercornithes may form a specialized offshoot of the stock which gave rise to the Neotropical Gruiformes; (4) that the Stercornithes seem to be a heterogeneous group. Since the publication of his paper the National Museum has acquired a number of specimens of these curious bird-remains, and the ventral surface of the skull of *Phororhacos* has been cleared of the stony matrix.

Mr. Andrews has courteously examined and discussed with me these specimens of Stercornithes, and we have conjointly come to the following conclusions:—

The skull, pelvis, and coracoid of *Phororhacos* indicate no relationship with the Ratitæ proper, nor with *Gastornis*, but point to affinities with the Gruiformes. *Pelecyornis* and *Liornis* are likely to stand near them.

Dryornis seems to belong to the Falconiformes, while *Mesembriornis*, so far as it is known, is perhaps a forerunner of true Rheidæ (cf. also Bronn's 'Thierreich,' Systemat. Theil, pp. 106 and 107).

Of *Brontornis* too little is known, and leg-bones alone afford no sufficient evidence for distinguishing between the Ratitæ and the flightless Carinatae, such, for instance, as *Aptornis*. The Santa-Cruz beds are no longer considered as of Lower Eocene, or even Oligocene, but of Miocene date.

As *Stereornis* is a synonym of *Phororhacos*, and has no affinities with the Eocene European *Gastornis*, the term *Stereornithes* can no longer be used in the sense in which I have employed it in Bronn's 'Thierreich.'

Anyhow, the *Stereornithes*, as originally proposed by Moreno and Mercerat, are, as a group, only of historical interest, and do not any longer convey a taxonomic meaning.

Yours &c.,

H. GADOW.

University Museum of Zoology, Cambridge.

August 22nd, 1896.

Breeding of Mycteria americana.—"On the banks of the Awarieru the 'Negro Cop' (*Mycteria americana*) breeds regularly. The nest, which is a rather bulky affair, consists of a bundle of sticks, these varying from half to one inch in circumference. It much resembles a gigantic Pigeon's nest, and has but a very slight depression in the centre for the reception of the eggs. These nests are generally placed on the large limbs of the silk-cotton tree (*Eriodendron anfractuosum*), parallel to the limb, and, to avoid being blown down by the wind, are cemented by a thick layer of mud mixed with grass, which on drying becomes hard, and thus thoroughly secures the structure. The eggs, which are about the size of those of a Goose and of a dirty white colour, are laid in September, the usual number being four, but occasionally five are deposited. The young birds make their appearance about the end of October, and are then of the size of young Ducks and covered with greyish-white down. They are unable at first either to stand or squat up, but lie in the nest stretched at full length, with their heads on one side, as if lifeless. The beak at this stage is perfectly straight, showing not the slightest indication of the upward curve at the tip characteristic of the adult bird. When the nesting-tree is approached the mother bird stands upright in the nest as a signal to her mate, who is never far off. The latter hastens at once to her side, and strutting up and down, claps his mandibles together with a loud defiant click that can be heard

some distance away. The young birds grow rapidly, and in a few weeks are nearly the size of their parents; but their bodies are still too heavy to be supported by their long weak legs, and not until the first plumage is complete are they able to stand upright in the nest. The quantity of fish the young birds consume is astonishing, and all day long the parents are constantly employed supplying them with food. For some time after leaving the nest the birds are of a light drab colour, and they only assume the snow-white plumage of the adult after several moults."—C. A. LLOYD in 'Timehri,' n.s., ix. p. 223.

The Nomenclature of the Palamedeidae.—In preparing a new Catalogue of the Animals in the Zoological Society's Gardens, I have been compelled to decide by what names to call the two species of Crested Screamer (*Chauna*) from Argentina and Colombia respectively. These, like almost every one else, I have hitherto catalogued as *Chauna chavaria* and *C. derbiana*. But Count Salvadori has lately shown (Cat. B. xxvii. p. 4) that *Palamedea chavaria* of Linnæus was probably based on a Colombian specimen, and has proposed, therefore, to change the name of the northern species to *Chauna chavaria*. To this I cannot agree, because no one could then possibly tell which of the two species was designated by "*chavaria*"—a name that, after having been universally referred to one for the last hundred years, is now held to apply better to the other. I have therefore determined to retain "*derbiana*" as the specific name of the northern *Chauna*, and to follow Count Salvadori's lead and call the southern bird "*cristata*," rejecting the Linnean term "*chavaria*" altogether for uncertainty.—P. L. S.

Nation's 'Birds of Peru.'—Prof. Nation, of Lima, sends us a printed sheet and a coloured lithograph of the beautiful Trogon, *Pharomacrus auriceps*, which we understand to be a kind of pattern of what his long-projected work on the Birds of Peru will be, if he can carry out his plans. We trust that he may succeed in doing so; but the task is a heavy one,

as upwards of 1300 species belong to the rich avifauna of that country. Prof. Nation says that he has met with examples of 41 species of birds within the ancient walls of Lima.

New Australian Expedition.—We learn from the 'Victorian Naturalist' that an expedition, fitted out by Mr. Calvert for the purpose of completing the work of the Elder Expedition of 1891, has left Adelaide by sea for the north, and will start from Derby, on the north-west coast, and work in an easterly direction towards the Overland Telegraph line at Powell's Creek. As Mr. G. A. Kearland (late of the Horn Expedition) accompanies it as zoological collector, we may be sure that due attention will be paid to the class of Birds.

Buller's 'Birds of New Zealand.'—We are glad to learn that there is an increasing demand in the colony for the 'Birds of New Zealand,' some private copies having realized fancy prices at recent sales by auction. This speaks well for the growth of science in our remote dependency, and, as further evidence of this, the Legislature has voted a substantial sum towards the cost of a new 'Flora of New Zealand,' Sir Joseph Hooker's classic work having long been out of print. It is understood that the colonial authorities were most anxious to induce Sir Joseph to undertake a new edition of that work, but, owing to the great advance made in that department of science, it would have necessitated practically the re-writing of it; and, with the large demands upon his time in other directions, Sir Joseph was compelled to decline. He recommended that the task should be entrusted to a local botanist of repute, Professor Kirk, who has accordingly undertaken the work. Instead of bringing out a third edition of his 'Birds of New Zealand,' Sir Walter Buller has, wisely, we think, decided to produce a good handbook in octavo form, without coloured plates, but profusely illustrated with woodcuts. We have no doubt that such a volume would have a large sale, not only in the colony, but elsewhere.

The Collection of Birds at Göttingen.—The Natural-History Museum of the University of Göttingen contains a good general collection of birds formerly belonging to the late Major Kirchhoff, a well-known German ornithologist resident near Stuttgart. The specimens (about 2000 in number) are very well mounted and correctly named and arranged. I had the pleasure of inspecting them in June last under the kind guidance of Prof. Ehlers. There are good examples of *Baleniceps rex* from the White Nile (*Brehm*), of *Nestor productus* of Norfolk Island (now extinct), and of *Æchmophorus major* from Chili, in full plumage, and many other noteworthy specimens.—P. L. S.

The Collection of Eggs of the late Herr Wm. Hollandt.—According to a communication made by Dr. Wm. Blasius to the 'Verein für Naturwissenschaft' of Brunswick, the late Rechtsanwalt Wilhelm Hollandt has bequeathed his valuable collection of eggs to the Ducal Natural-History Museum of Brunswick. The collection, originally commenced by the acquisition of the Breitschneider collection of German eggs in 1879, is of a general character, and consists of upwards of 10,000 specimens, referred to 2710 species, and classified according to Gray's 'Hand-list.' There are full series of eggs of many of the rarer species, and only 13 families out of the 116 adopted in the 'Hand-list' are unrepresented.

Additions to the Bird-Collections of the British Museum.—The Parliamentary Report of the British Museum for 1896 contains the following list of the principal additions made to the Collection of Birds during the past year:—Two Little Auks (*Mergulus alle*), from Sandringham; presented by H.R.H. The Prince of Wales. Two nestlings of Bewick's Swan (*Cygnus bewicki*), from Kolguev Island; presented by Colonel Feilden. 217 birds and eggs from the Salvage Islands, Madeira, and Porto Santo, containing examples of many species of great interest; presented by the Hon. Cecil Baring and W. R. Ogilvie Grant, Esq. A collection of 924 birds, with nests and eggs, from the Province of Rio de

Janeiro; presented by Alexander Fry, Esq. 202 skins of South-American birds; presented by Osbert Salvin, Esq., F.R.S., and F. DuCane Godman, Esq., F.R.S. The last instalment of the Shelley Collection, numbering 3125 skins of African birds, including many types and species new to the collection; purchased. A specimen of a rare Petrel (*Estrelata incerta*), from the Cape Seas; presented by Thomas Parkin, Esq. The types of 24 new species of birds discovered during Dr. A. Donaldson Smith's expedition to Lake Rudolph; presented by Dr. Donaldson Smith. Eight specimens from Nassa, in Speke Gulf, Victoria Nyanza, obtained by the Rev. E. H. Hubbard, and containing the type of *Francolinus hubbardi*; purchased. The type specimen of *Tricholema ansorgii*, from Uganda; presented by Dr. Ansorge. Birds from Somaliland, collected by E. Lort Phillips, Esq., and containing 12 types and examples of 9 species previously unrepresented in the collection; purchased. 71 birds from Aden; presented by Colonel Yerbury. 21 specimens of birds from Sikhim, including the type of *Garrulax waddelli*; presented by Surgeon-Major L. A. Waddell. 4426 birds, forming the collection made by Colonel H. H. Godwin-Austen during his expeditions to the mountain-districts of Assam and Manipur, including specimens of many species unrepresented in the Museum and several types; purchased. A pair of Mrs. Hume's Pheasants (*Phasianus humie*), from the Ruby-Mines district in British Burma; presented by E. W. Oates, Esq. 82 birds from Kina Balu and the Sulu Archipelago, collected by A. H. Everett, Esq.; purchased. 22 birds from the islands of Luzon and Mindoro, including examples of four species new to the collection; obtained by A. H. Everett, Esq.; purchased. 224 birds from the Philippine Islands, including the type of a new genus and 35 types of new species; presented by the subscribers to the Whitehead Exploration Fund. Two males of a rare species of Bird of Paradise (*Parotia carolæ*) from N.W. New Guinea, new to the collection; purchased. Five specimens from Great Natuna Island, including specimens of two species new to the collection, obtained by Charles E.

Hose, Esq. ; purchased. 58 birds from New Zealand ; presented by Sir Samuel Scott, Bart. A series of 175 birds collected in the Hawaiian Islands, comprising examples of no less than 26 species new to the collection ; presented by the Joint Committee of the Royal Society and the British Association. 13 birds, including specimens of nine species new to the collection ; received in exchange from the Hon. Walter Rothschild. 109 Cuckoos' eggs and sets of the eggs of foster-parents ; purchased.

The total number of accessions to the Bird-collection in 1895 is given as 10,561.

As regards "arrangement and conservation," the following particulars are given :—

The collection of Skeletons of Birds has been removed from the studies in the basement to the north-west corridor, and has been temporarily arranged in systematic order on racks, preparatory to the final classification and arrangement in proper cabinets and boxes in juxtaposition with the collection of skins of the same class.

The collection of Ducks has been arranged and labelled in accordance with the Catalogue of Birds prepared by Count Salvadori ; the Petrels have been catalogued and arranged by Mr. Osbert Salvin, F.R.S. ; and the Gulls and Terns by Mr. Howard Saunders.

The Herons have also been catalogued and arranged, and the whole of the Plovers and Sandpipers catalogued and placed in glass-topped boxes.

A group illustrating the "showing-off" of the male of the Great Bustard (*Otis tarda*) has been mounted ; the specimens have been presented by Abel Chapman, Esq.

A group illustrating the nesting-habits of the Pied Hornbill of South Africa has also been mounted, with a section of the tree in which the female is imprisoned by the male bird.

The Godwin-Austen Collection and the Shelley Collection have been registered and incorporated in the cabinet series of skins.

The newly-discovered Extinct Gigantic Bird of South Australia.—At the recent Meeting of the British Association at Liverpool a letter was read in Section D, addressed to Prof. Newton by Dr. Stirling of Adelaide, giving a preliminary account of the extinct gigantic bird of the *Diprotodon*-beds in South Australia, to the discovery of which we have alluded on former occasions (see ‘Ibis,’ 1894, p. 328, p. 577, and 1896, p. 430). Dr. Stirling says:—“The bird is, no doubt, more of an Emeu than anything else, though the head, unfortunately much broken, is very different; but, as regards the limb- (leg-) bones, it has the proportions of the thick-set Moas in the thigh-bone and tibia, and of the slender-legged Moas in the tarsus, with absurdly small toes for such a bulk. It is quite true that the outer toe has only four segments, as has been stated in ‘Nature’ (*cf.* ‘Nature,’ vol. I. p. 206, 1894).” The paper describing this most interesting discovery by Dr. Stirling and Mr. Zietz has been read at a Meeting of the Royal Society of South Australia, and will shortly be in print. The name proposed for the new bird is *Genyornis newtoni*; *Genyornis* being in reference to the large size of the lower jaw, and the specific term to Prof. Newton, to whom the species is dedicated.

LI.—Obituary.

LORD LILFORD.—It was with the deepest regret that we announced in our last Part the sad loss which the British Ornithologists’ Union had sustained by the death of one who had been for many years its President, and an original member of the brotherhood formed in November 1858. At the time (June 18th) it was not possible to give any adequate sketch of our late President’s career, and even now we wish that the record of such a genial man, thorough naturalist, and good sportsman had fallen to more capable hands.

Thomas Lyttleton Powys, fourth Baron Lilford, born 18th March, 1833, was the son of the third peer by the Hon. Mary Elizabeth Fox, daughter of the third Lord Holland. Even when at Harrow he had begun to contribute to the ‘Zoo-

logist,' and he continued to do so while at Christ Church, Oxford, as well as during his vacations, while it is hardly necessary to say that his subsequent letters and articles in that and other periodicals only ceased with his life. His first communication to 'The Ibis' was in 1860, on the birds observed in the Ionian Islands and on the coast of Albania, &c., in the years 1857 and 1858: a very breezy, pleasant series of articles, with just the flavour of sport about the natural history that a new publication wanted. To these succeeded—in 1865 and 1866—some charming notes on Spain, which Lord Lilford had visited in 1856 and again in 1864. He was so delighted with the country that he not only returned in 1869, but devoted himself to working up the ornithology of the southern portion, and that he did not write about his experiences in the *marismas* of the Guadalquivir was probably due to his delicate aversion for anything like trespassing upon ground worked by others. His liking for everything Spanish led him to learn that language; but his natural aptitude for such study must have been considerable, for in 1869, when the writer had the pleasure of making his personal acquaintance in Seville, he spoke Castilian admirably, and also its dialects with a raciness acquired by few Englishmen. In 1873 and 1874, Lord Lilford, already somewhat crippled by the rheumatic gout to which he had long been subject, and to which he subsequently became a martyr, visited the Italian shores of the Mediterranean in the yacht 'Zara,' and on that excursion he re-discovered that rare Gull, *Larus audouini*, of which no one had seen a fresh specimen for many a year. In 1875 portions of Cyprus were visited, as will be mentioned hereafter. In the same yacht, in the spring of 1876, he visited Santander and the neighbouring parts of north-western Spain; but it fell to the lot of his friend, Lt.-Col. Irby, to give an account of the avifauna of this district (Ibis, 1883, p. 173). In the early part of 1882 the Mediterranean again attracted his attention, and another haunt of Audouin's Gull was explored—not to mention a previous discovery of it on an islet which was not named in print, though an open secret for the discreet. But these voyages had to be abandoned at last, and the personal

exploration of Cyprus was reserved for Dr. Guillemard and others, though Lord Lilford contributed to the expedition with his wonted liberality, and wrote a list of the birds of that island. Henceforward he devoted himself to work at home : his magnificent aviaries, where birds could be observed in a state of freedom only second to that of nature, his natural-history correspondence, his 'Birds of Northamptonshire' and his 'Coloured Figures of the Birds of the British Islands.' Always an ardent sportsman, Lord Lilford took an active part in hawking as long as he could ; he constructed a decoy in the valley of the Nene, and even at the last, when confined to a bath-chair, he attended a meet of the otter-hounds in his neighbourhood. Although he had been ailing, the end came unexpectedly on June 17th, with a sudden attack of syncope ; and on the 20th he was buried at Achurch, near Lilford Hall, amid widespread and genuine mourning.

It is impossible to specify Lord Lilford's acts of liberality with regard to this journal. Whenever money was wanted for an illustration, or the balance in hand was low, he only required an intimation. This generosity was by no means confined to 'The Ibis' and kindred works on science ; the Zoological Society's Gardens were constantly enriched by his gifts ; and we have heard it stated that his anonymous benefactions were more than double those with which his name was associated. To his intimate knowledge of wild animals and their ways he added an excellent judgment, and few were better qualified to hold the balance between the sportsman on the one side and the well-meaning, but often unpractical, lover of birds on the other. His death is a general loss.

The following is a list of Lord Lilford's principal publications on Ornithology :—

- Notes on Birds observed in the Ionian Islands, and the Provinces of Albania proper, Epirus, Acarnania, and Montenegro. *Ibis*, 1860, p. 1, p. 133, p. 228, and p. 338.
- On the Extinction in Europe of the Common Francolin (*Francolinus vulgaris*, Steph.). *Ibis*, 1862, p. 352.

- Notes on the Ornithology of Spain. *Ibis*, 1865, p. 166; 1866, p. 173 and p. 377.
- Letter on the occurrence of *Calandrella reboudia* [*C. bætica*, Dresser] and *Numenius hudsonicus* in Spain. *Ibis*, 1873, p. 98.
- Cruise of the 'Zara,' R.Y.S., in the Mediterranean. *Ibis*, 1875, p. 1.
- Exhibition of some specimens of Hybrid Pheasants. *P. Z. S.* 1880, p. 421.
- On the Breeding of the Flamingo in Southern Spain. *P. Z. S.* 1880, p. 446.
- Letter on a probably new locality for *Larus audouini*. *Ibis*, 1880, p. 480.
- Notes on the Birds of Northamptonshire. *Journ. Northampt. Nat. Hist. Soc. i.* (1880-83).
- Exhibition of, and remarks upon, a skin of *Emberiza rustica*. *P. Z. S.* 1882, p. 721.
- Notes on the Birds of Seville. *Ibis*, 1883, p. 233.
- Rare Birds in Andalucia. *Ibis*, 1884, p. 124.
- Notes on Mediterranean Ornithology. *Ibis*, 1887, p. 261.
- Exhibition of a specimen of *Aquila rapax* from Southern Spain. *P. Z. S.* 1888, p. 248.
- Pallas's Sand-Grouse in Spain. *Zoologist*, 1888, p. 301.
- Notes on Raptorial Birds in the Lilford Aviaries. *Trans. Norfolk & Norw. Nat. Soc. iv.* p. 564 (1888).
- A List of the Birds of Cyprus. *Ibis*, 1889, p. 305.
- A Large Race of the Great Grey Shrike. *Zoologist*, 1890, p. 108.
- Notes on Birds in the Lilford Aviaries. *Trans. Norfolk & Norw. Nat. Soc. v.* p. 128 (1891).
- Letter on the Nesting-habits of the Bustard-Quail (*Turnix nigricollis*). *Ibis*, 1892, p. 467.
- Variety of *Grus cinerea* in Spain. *Zoologist*, 1892, p. 265.
- Exhibition of, and remarks upon, a skin of a Duck believed to be a Hybrid between the Mallard (*Anas boschas*) and the Teal (*Querquedula crecca*). *P. Z. S.* 1895, p. 2.
- Exhibition of, and remarks upon, a specimen of the American Wigeon (*Mareca americana*). *P. Z. S.* 1895, p. 273.
- Brünnich's Guillemot in Cambridgeshire. *Zoologist*, 1895, p. 109.
- Notes on the Birds of Northamptonshire and Neighbourhood. Illustrated by Messrs. A. Thorburn and G. E. Lodge and a Map. Royal 8vo. London, 1895.
- Coloured Figures of the Birds of the British Islands. Parts i.-xxxii. Royal 8vo. London, 1885-96.

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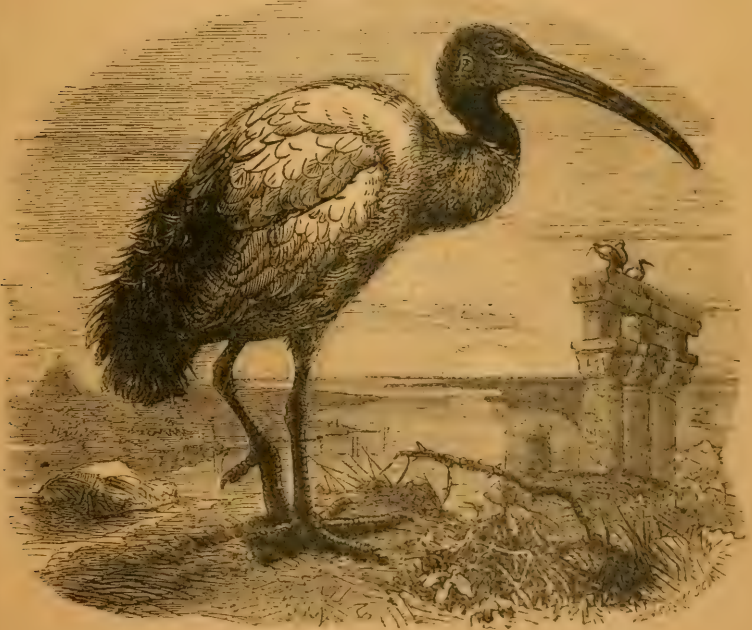
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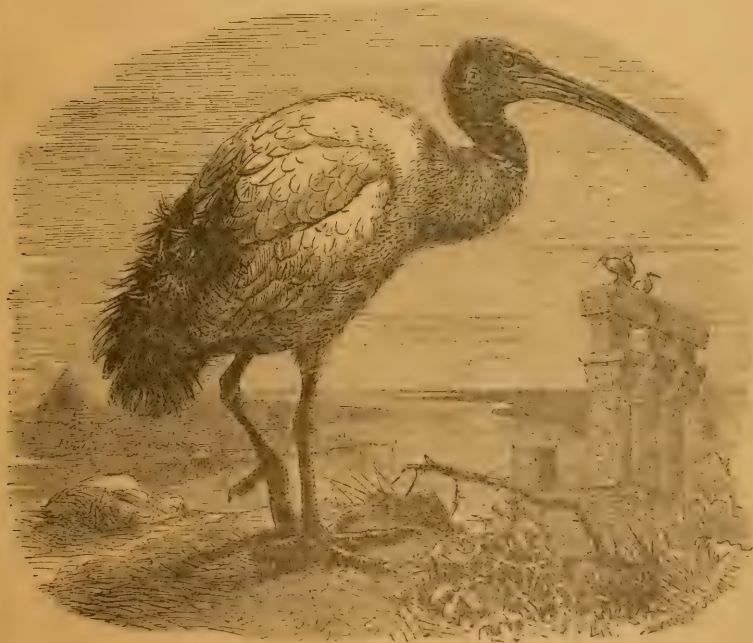
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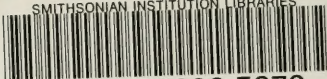
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